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CHARLES E. DE M. SAJOUS, M.D., LL.D., and L. MADISON TAYLOR, A.B., M.D.

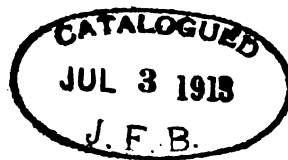
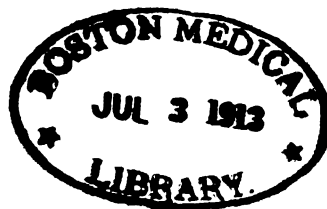
LOUIS T. DE M. SAJOUS, B.S., M.D.,
ASSISTANT EDITOR.

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Department in charge of J. MADISON TAYLOR, A.M., M.D.

RATIONAL TREATMENT OF HYPERTENSION AND SCLEROSIS OF THE ARTERIAL SYSTEM.

By CURRAN POPE, M.D.

It is usually customary to open an article of this character, with the trite saying that "A man is as old as his arteries," but I think we may add to this that life, liberty, and the pursuit of happiness, likewise, depend upon them. We all meet these lesions although they are especially provocative of nervous and mental mischief. It is a condition of affairs rarely suspected by the victim, often overlooked by the physician, and frequently treated, symptomatically, under numerous headings. It is the lesion *par excellence* of the strenuous man, of the man who lives hardest above the ears, and for that reason, early diagnosis and rational treatment become a matter of very great importance, for here the pound of prevention is worth forty of cure.

The heart is a force-pump, approximately 6 x 4 inches; it averages about seventy beats per minute, 4,200 per hour, 100,800 daily, 36,792,000 annually and 2,575,444,000 in the life allotted to man by the Psalmist, that is, seventy years. It averages $2\frac{1}{2}$ ounces of blood per contraction, 175 ounces per minute, $656\frac{1}{4}$ pounds per hour, or $7\frac{1}{2}$ tons a day, which is the equivalent of lifting one ton 122 feet high in a day. It should be remembered that the thirty pounds of blood that is contained in the body passes through the heart each three minutes¹. The arteries of the body are normally elastic, and this elasticity is a *sine qua non*. The tension within the arteries depends upon four factors; energy of heart contraction; resistance in the peripheral vessels; activity or elasticity of the arterial vessel walls and lastly the volume of blood circulating. All of these conditions act usually through and are brought about by the influence of the vasomotor system. Normally, the vascular system protects itself against constant variations in pressure by the intimate relations that exist between different parts of the system, changes

of the blood-supply of one organ or set of organs being met by an opposite change in another organ or set of organs, thus maintaining the level. This co-ordination of different parts of the circulation is carried out through the widening and narrowing of the lumen of the blood-vessels, by contraction or relaxation of the muscular fibers in the walls of the arteries, capillaries and veins. This action of the vascular muscle is usually controlled by vasomotor nerves, these, in turn, possibly being influenced by the secretion of certain internal glands; the suprarenal raising, and the thyroid lowering, blood-pressure.

In speaking of hypertension, I wish it clearly understood that I mean what is generally so denominated; that is, more or less permanent rise in pressure that exists without sufficient factors to diagnose arterial sclerosis or nephritis, but which means in the end, if unchecked, all those cardiovascular conditions that are the result of those factors producing the hypertension or will result from the hypertension itself. The probability that one has to deal with some localized sclerosis of cerebral, splanchnic, or renal origin, that is not or cannot be definitely discovered, must never be overlooked. True sclerosis is characterized by thickening of the walls of arteries, due to morbid changes. I am inclined to accept the division of high arterial tension into three stages, the first of which would be characterized by persistent high tension, due to hypertonicity of the muscular coats of the arteries and arterioles, the stage of presclerosis of Huchard; the angiosclerosis of Von Basch, and the chronic hypertension of Cook. The second stage would involve the progressive fibrosis, which causes increased obstruction in the arteries of certain areas and the tendency to heart exhaustion and insufficiency, the terminal stage being the third. Sir Lauder Brunton² believes that the substances that raise arterial tension in advanced life are unknown, but are probably some product of the internal secretion and tissue metabolism, that tend to cause contraction of vessels with subsequent rise of blood-pressure. Furthermore, that the products from an albuminous diet during digestion in the intestines have a similar effect. Involutionally it is normal to advanced life, but it may appear in young subjects, whose vessel walls are weak and who inherit this tendency. It is more frequently found in males, because of the diseases to which they are subjected, and to the more strenuous life that is led. Alcohol with its degenerative influences, rheumatism and gout with their toxic products, tend to produce the disease. Syphilis, either as an inflammation of the arteries themselves, or as part of an infiltration in which gummatous nodules may occur, is undoubtedly a frequent cause. Of the acute infections, typhoid fever is by far the most serious, as well as the most prolific cause of the disease. I cannot but pause a moment to note the great value of hydrotherapy, in this infection, not only for typhoid fever *per se*, but as a preventative of after vascular damage. Hydrotherapeutics of the fever controls the formation and favors the elimination of toxins; preserves and increases the elasticity of the arteries and is a true preventative of subsequent sclerosis. Athletics pushed beyond their usual limits, producing morbid strains and great pressure, or the simple overwork of the muscular tissues

of the body are frequently to be found underlying its manifestations. But by far the most frequent cause originates in those putrefactive changes that take place in the intestinal tract, especially where they are accompanied by excessive eating and drinking, not necessarily alcoholic beverages, but simple fluids, which overfill and distend the blood-vessels. To the student of these conditions, we are apt to accept Huchard's³ statement that this trouble begins in intoxication, continues in intoxication, and ends in intoxication. The *symptoms* depend upon the region or regions affected, and it would be foreign to this article to more than simply sketch, rather than describe, them. In the cardio-vascular system we find arrhythmia, second sound accentuated and ringing, hypertrophy of the left ventricle compensatory to the peripheral resistance, later, its apex displaced, with dyspnœa, palpitation, murmurs, dilatation with symptoms of valvular insufficiency and angina pectoris. Myocarditis is not an infrequent lesion.

The kidney may be the cause of, or be affected by, arterial sclerosis. Its parenchyma atrophies from want of blood-supply, giving us the sclerotic kidney with an urine that is abundant, of low specific gravity, with intermittent traces of albumin; few epithelium and casts or cylindroids. In the mental and nervous sphere, we find loss of memory of the immediate past; mental confusion, inaptitude for mental work, followed by lassitude and disability for continued reading; paræsthesiæ, numbness, headache, vertigo, precordial oppression, insomnia, hæmorrhage, transient hemiplegia, palsies, etc. Sometimes it manifests itself in reduced vitality and in this way alone. Some have described a facies and peculiar pallor, especially noticeable around the mouth, temple and eyes, with a dryness of skin, but I have never been able to satisfy myself on this point.

What constitutes normal arterial tension? From considerable personal experience, and from a consultation of a large number of authorities, I am inclined to accept the following as within normal limits, when using the wide 12 centimeter cuff.

Up to the 14th year	90—100 mm.
Young adults, 15 to 21 years	100—120 "
Adults, 21 to 45 years	120—135 "
After middle life, 45 to 65 years	135—150 "

Janeway⁴ puts the matter well when he says that blood-pressure in the young adult above 135, in adults 145, or after middle life 160 mm., is suspicious and that the lower limit in health for adults should be 90 and children 80 mm. It is oftentimes of great advantage to know the pulse-pressure, which is normally 30 mm. This is the reading between the systolic and diastolic pressure. It gives a pretty fair index, especially after exertion, of the functional power of the heart. It must be borne in mind that pulse-rate has little relation to blood-pressure; that blood-pressure rises during menstruation, the menopause and from over activity of the suprarenals, after exercise, excitement, worry, etc. The pathological anatomy is too well-known for me to stop and call your attention to more than one or two

points that I consider of interest. We may sum up by saying, that the dominant primary event in arterial sclerosis, no matter what its origin, is an increased tension, with a localized, or it may be a diffused, weakening of the arterial walls, especially of the media, which induces increased strain upon the remaining coats; if this be not excessive, that strain leads to connective-tissue growth and development of the characteristic lesions of arterio-sclerosis. Remember that where the arterial muscle is held in extreme tension, it degenerates, because of diminished movement and activity and because the metabolism of its structure is prevented. Again, high arterial tension oftentimes is the result of a physiological demand and, if this ceases, the pressure subsides; but the arterial damage may remain, and thus we can have a low or comparatively low blood-pressure with sclerotic changes. Always bear in mind the frequent association of miliary aneurisms in the brain, which arise from the same concomitant causes and which may at any time produce apoplexy. I can not but dwell on the absolute importance of diagnosing changes in the vascular system. To overlook them is to nullify almost all kinds of therapeutics, no matter for what lesion the physician is medicating. In the very early stages the poverty of symptoms may lead to error; in the latter stages the profusion of evident structural changes, whether cardiac, renal or cerebral, may cause the physician to lose sight of the disease in the study of its effects. It is in the mid-period that it is most likely to be recognized.

When we find an individual suffering from fatigue on slight exertion, with abnormal sensation in the limbs, with some difficulty in movement; slight pains here and there, with flushed, florid face; slight loss of hearing, slight headache, vertigo, reeling or insomnia; with occasional changes in character, with palpitation of the heart, and hypertension, all made worse by labor or fatigue, and with no evident brain, kidney or heart disease, search deeply, and you will find vascular hypertension, or commencing sclerosis. My experience has taught me that the ringing and accentuation of the second sound of the heart is a valuable early sign, and which may become harsher, as the aortic valves and arch of the aorta become rougher. The ophthalmologist can give valuable aid in the diagnosis. Thickening of the retinal arteries, high light of the arterial image and the compression of veins where crossed by arteries, will give the keynote early in the course of the disease. Later, the movement of the apex-beat from the fifth interspace between the mammary and parasternal lines, towards the axillary line, is noted, for as the base of the heart becomes fixed like a pivot, it forms a firm center, around which the heart swings with its elongated left ventricle. Palpable arteries are more often noticed in those who give a history of heavy physical labor, and in those who have suffered from gout, rheumatism and typhoid. Here the Roentgen rays will throw shades upon the plate in proportion to the calcium deposited in the artery.

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(To be concluded in the February issue.)

FACIAL SPASM AND TIC; TORTICOLLIS—DIAGNOSIS AND TREATMENT.

By TOM A. WILLIAMS, M.B., C.M. (Edin.),

WASHINGTON, D. C.

THOUGH not dangerous to life, few affections are more troublesome to their victim than the facial grimaces and twistings of the neck comprised in the above titles. The patients are willing to take great pain to get rid of the unpleasant gestures, which though not painful in themselves, cause a great deal of moral suffering, besides interfering with efficiency both in business and social life.

The obstinacy of these afflictions has caused them to be looked upon with despair by practitioners; and the following considerations are intended to show that medical pessimism with regard to them is not well-founded; that they are in reality most amenable to treatment; but that the indications for this depend upon a clear diagnosis, the main elements of which I shall briefly indicate and illustrate by cases.

The crucial problem is the distinction between a true spasm¹ which is an irritation of some part of a reflex arc by an alteration of structure or perhaps biochemically, as against a true tic which is a movement dictated quasi-volitionally, not necessarily the result of an irritation in the periphery but inspired by an idea, desire, imperative need, *i.e.*, psycho-genetically. This is a real and practical distinction, and not merely academic; for from its appreciation flows one's choice of surgery, medicine or psychotherapy as the remedial agent.²

For succinctness, the main diagnostic distinctions are collected in the following table, and further elucidated in the commentary and cases which follow. I have not gone into the details of treatment, that of the surgeon not coming within my province; while the medical and psychic measures would require so much space for their description as to unduly prolong this article. The main principles, however, are described elsewhere¹⁶; and the technique of their application has now been mastered by a considerable number of neurologists. My main object in this paper is to emphasize the extreme importance of correct diagnosis.

<i>Spasm.</i>	<i>Tic.</i>	<i>Chorea.</i>	<i>Cerebellar and Rubro-spinal Tremor.</i>
Sudden, resembling electrical stimulation.	Brusque and brief, slower.	Still slower.	Not sudden but regular and increasing by movement.
Rhythmic and synchronous, or in lightening waves of same movement.	In volleys of similar movement repeatedly.	Irregular, not synchronous.	
		Extreme variability in movement, with tendency to unilaterality.	Similar oscillations.

<i>Spasm.</i>	<i>Tic.</i>	<i>Chorea.</i>	<i>Cerebellar and Rubro-spinal Tremor.</i>
	When tonic, distinguished from stereotyped act by absence of catatonic attitude.		
Muscles often enfeebled.	No weakness, often hyperkinetic hypertrophy.	Myasthenia, hypotonia.	Myasthenia, hypotonia, or the reverse.
Exaggeration of reflex concerned only.	Reflexes normal.	Reflexes often modified.	Reflexes increased.
Distribution of peripheral nerve.	Locality condition by an idea.	Laterality.	Laterality or not.
Often painful, always distressing, no craving.	Painless.	Sometimes painful.	Never painful.
Persists in and may interrupt sleep.	Tic disappears in sleep.	Sleep interfered with.	Disappears in sleep.
Purposeless.	Pseudo co-ordinate, intentional act.	Purposeless.	Purposeless.
Irreproducible voluntarily, unmodified by volition or emotion?	Influenced by emotion or volition, but impulsive and followed by satisfaction, always arrestable (leaving no trace) by a subterfuge, a neutralizing act, inefficacious mechanically or physiologically, but effective psychically; also variously by solitude, distraction, position, etc.	Practically uncontrollable by will, aggravated by emotion.	Minimized at rest.
Variable ætiology, but generally peripheral irritation, e.g. trigeminal neuralgia (which is not a true tic).	Psychasthenic character. Similar heredity, but always first generated by a determining stimulus; it is the sequel to the unhindered repetition of a once voluntary purposive act, becoming an impulsive obsession.	Acute rheumatic diathesis, probably bacterial. No similar heredity.	Variable neoplasm.

Thus, if the motor reaction is consecutive to pathological irritation at any point on a bulbospinal reflex arc, it is a spasm.

If the cortex is or has been involved in its production, it is not a spasm.

Should it present, in addition to the fact of cortical participation, the aforementioned distinctive psychological features, it is a tic.

Jacksonian convulsions, hemiathetosis, and the tremors preceding or following hemiplegia are all easily distinguished from both spasm and tic by accessory characters well known to every neurologist, which need not here be discussed.

This *κακοηθής* which invariably precedes the explosion of the true tic, ranges it among physiological acts, all of which when postponed beyond their due period will cause intense desire for their performance, which is followed by relief, just as is the tic. It is, however, a physiological act *perverted*; for it is ill-timed, being dependent upon no adequate stimulus, being unnecessary to the body's health or ultimate comfort, and being beyond the power of inhibition by the patient's enfeebled will, which evidences itself, as a rule, by other stigmata of the psychasthenic state. Into these I cannot enter here, save to mention the scrupulosities, timidities, feelings of inadequacy, desire for peculiarity, as well as the want of correspondence of the emotions with the real situation, showing itself by intense joy or sadness over trifles, the morbid fears, and the painful anguish, sometimes indeed *à propos* of nothing which such patients exhibit. The arousing of this last symptom when the patient tries to suppress the tic is pathognomonic, distinguishing it from a true spasm. The psychic symptoms of these patients are described with much insight and fulness and clarity by Janet³. The following cases illustrate these points:—

I. Occipital neuralgia and pain in the neck led the patient to try various positions to allay the agony, in the course of which he found that rotation to the right brought transient relief. By dint of repetition, the movement became involuntary (Brissaud and Meige).

II. In this case, the subject used to spend the whole evening inert, arms folded, without reading or working, tilting his head forward or backward to re-discover a "cracking?" in his neck from which he suffered—a proceeding which gradually developed into a tic (Brissaud and Meige).

III. In another case, a school girl was dissatisfied with the place allotted to her in the schoolroom, and pretended that she felt a draught on her neck coming from a window on her left. The initial movement was an elevation of the shoulder as if to bring her clothes a little more closely round her neck; then she commenced to depress her head and indicate her discomfort by facial grimaces; and these eventually passed beyond voluntary control (Raymond and Janet).

The three cases just cited illustrate the causation of tic by definite peripheral stimulus.

IV. A case arising from a habit attitude was that of a woman who used to pass the day sewing or knitting at her window and amusing herself from time to time by pensively looking out into the street. Not long afterward, she noticed how much more pleasant it was to allow her head to turn to the right, and how troublesome it was to keep it straight. At length she found this impossible, except with the aid of her hands (Sgobbo⁴).

V. Another case of habit movement is that of the tic of the *colporteur* i.e., the heaving of the shoulders due to the habit of carrying heavy weights upon them⁵.

VI. The peripheral source of tic is well illustrated by the case Lannois⁶ caused by the constant looking at a papilloma on the nose and cured by the removal of the growth.

VII. The following case⁷ is that of a man forty years of age, with a left torticollis dating back twenty months. His account of its origin was to the following effect: For some years he had been employed in a commercial office, where from seven in the morning to eight at night he was occupied in writing, head and body being turned to the left. At the beginning of 1900, consequent on a succession of troubles, he noticed that his head was twisting round to the left in an exaggerated fashion while he was writing; and the rotation gradually began to assert itself at other times, when he was reading, or eating, or buttoning his boots. Even apart from any other act, the rotatory movement soon became incessant, continuing while he was on his feet, but vanishing completely if he lay down or if the head was supported. At present he had the greatest difficulty in writing, for his head at once deviated violently to the right.

At the Congress of Limoges in 1901, Briand reported the following case:

VIII. As the result of a bicycle accident, a torticollis developed in a young man, which ordinary treatment was sufficient to cure; and it remained in abeyance until he entered a government school, when its place was taken by a tic of the shoulder, with twitching of the mouth and eye. At the approach of the annual vacation, the tic disappeared, and the torticollis, for some reason or other, became obvious again. The latter had once more been controlled by the time the holidays were over; but on the patient's re-entering school, the shoulder tic again manifested itself, and this sequence recurred several times. A permanent cure was eventually effected, but he continued as psychasthenic as ever.

I quote now a case showing the extension and the failure of surgical operation:

IX. The patient, forty-nine years of age, was suffering from muscular "spasms" that kept turning his head first to one side and then to the other. Fixation of the head between the hands assured a few moments' respite, but the convulsions were quick to re-appear. The left hand was constantly being brought up to the face in the endeavor to procure immobility, while the arms were the seat of abrupt, jerking movements intermediate between tremor and chorea. The various reflexes were normal; stimulation of the sole of the foot evoked a flexor response on either side, and no symptom of hysteria was forthcoming. The disease had made its appearance in 1879 when, without discoverable motive, the head had commenced to tremble and to work round to the left. Section of the tendon of the sternomastoid did not impede the development of the affection, which two years later increased in intensity, when the before-mentioned movements in the arms were superadded. The likelihood seemed to be that they were of the same nature and origin as the torticollis itself.

X and XI. The following cases, reported by Desterac⁸ to the Congress of Toulouse, April, 1902, illustrate a lack of accurate neurological technique. The walk of one patient resembled the spastic gait of Friedreich's ataxia, that of the other was inco-ordinate like cerebellar ataxia; in addition both had "spasm" of the hand in writing, spasmodic movements of the trunk, and "spasmodic

torticollis." Both had club foot, and scoliosis, and one was afflicted with "spasm" of the face and left arm. In this case, further, there was nystagmus, together with loss of reflexes and difficulty in articulation, while fibrillary contractions were to be observed in his muscles. The other patient's reflexes were exaggerated; and he showed a double extensor response. Meige later saw the former patient and found that the scoliosis was not permanent, the deformation of the foot could be overcome, and at the same time he failed to convince himself of the presence of nystagmus and the absence of the knee jerks. Moreover he happened to observe the patient in the street unawares, and remarked how between two phases of bizarre contortions, his vicious attitudes and convulsive gestures almost entirely vanished. In fact, the clinical picture seemed to be quite other than that associated with organic disease such as Friedreich's disease, or hereditary cerebellar ataxia.

In the face, the criteria of diagnosis of spasmodic movements in no way differ from the foregoing; two examples will suffice:—

XII. A middle aged woman was seen by the writer with Dr. J. S. Lamb of Washington. About two years ago the affection began with slight, short twitchings of the left orbicularis. These became intermittently more extensive until the whole face on one side was affected. Sometimes the attacks ceased for weeks at a time, and then returned very violently. They were aggravated by cold air, speaking, eating, and emotions; but were not in the least arrested by the most powerful effort of the will, or by distraction or concentration of attention elsewhere. While not invariable in extent, the hyperkinesis never transgressed the domain of the seventh cranial nerve. It in no way resembled a co-ordinated act, though the opposite orbicularis sometimes participated slightly. This was due to bulbar overflow of the reflex; for though the patient was a nervous woman and she had become more so since her affliction, yet the movements were independent of this nervousness. They were accompanied by an uncomfortable sensation, and tears sometimes flowed during the spasm, but there was no pain. She was not sure whether they persisted in sleep.

Dr. Lamb informed me that a case which appeared to him entirely similar was cured by section of the orbicularis muscle at its insertion into the inferior border of the orbit.

Dr. Lamb's case is an example, along with the others, of true facial spasm, which is, as a rule, curable only by surgery, either by section of a nerve or other artificial interruption of the reflex arc in some part of its trajectory.

XIII. One day in June, 1900, the patient, this time a man, experienced a feeling of discomfort in the articulation of the lower jaw, the sequel to a slight alveolo-dental periostitis in the neighborhood of a bad tooth; and, interpreting the sensation as a new and grave symptom in the march of his malady, forthwith proceeded to investigate its development by playing with his maxilla. Then ensued a perfect debauch of masticatory movements, in which agreeable repetition of every conceivable grimace was joined to protrusion and retraction of the jaw in the search of articular cracks. He

became so wholly pre-occupied with this tic of mastication that ere long he had begun to pinch the mucous membrane in the inside of the right cheek between the second molars; and this fresh object of absorbing attention, in its turn, led quickly to some excoriation of the mucosa on both sides. No halt was called by the lower jaw to give the abrasions time for repair, with the natural outcome that they suppurred and paved the way for an attack of infective stomatitis with pain, fever, and malaise, which necessitated the application of the thermo-cautery to the ulcerated areas for its relief (Meige¹⁴).

XIV and XV. A recent example of the regrettable confusion derived from indiscriminate use of the word "spasm" is afforded by the two cases reported by Girsamo Mirto⁹. One was treated by alcohol injections in the seventh nerve, the other by neurectomy of the ophthalmic fifth. Both relapsed early, and Mirto inferred that the blepharo-spasm must therefore be psychic, one of these cases being a tic of professional movement and the other a tic due to faulty habitual attitude.

All hyperkineses of psychogenetic origin do not derive from the psychasthenic constitution, for sometimes they originate in a fixed idea suggested by imitation, direct command, or by some other procedure of suggestion as in the following case of Boetius¹⁵. (These are called hysterical tics.¹⁰)

XVI. The patient was an Irish woman who became ill after having rubbed her neck with a mercurial ointment procured from a charlatan. The author tells us that at the end of the week the woman was completely cured by the use of sudorific tisanes, by the frequent application of fomentations, and by ointments, etc., applied to the neck; but that a short time later, having been imprudent enough to put again the mercurial ointment upon the nape of the neck, the same contortions returned. These were neglected for some time; consequently they augmented to such an extent that neither the remedies already applied nor any other were successful.

XVII. The second case is that of a Parisian woman, who suffered from a similar contortion of the head towards the left side after several injuries resulting from a fall on the sacrum which occurred over three months previous. The author states that for a short time his remedies appeared to cure the contortion of the head; but that it always returned, and at the end of two months he gave up the treatment. He added that since then, in spite of the efforts of different physicians and surgeons, the contortion remained as it had been since the beginning.

Though the elements in the latter case are insufficient for a certain diagnosis, yet in the former its removal by tisanes and poultices, and its production and reproduction by an ointment show that suggestion was the active cause, in which case it must be called hysterical. The criteria by which hysteria is diagnosticated are discussed at length by the author in the October number of *International Clinics*, 1908.

The derivation of such fixed ideas from medical sources has been shown by Bernheim¹¹ and Babinski¹² at various times, and also by the writer at

the Congress of Lille¹³. A translation of the communication appears in *American Medicine*, August, 1908.

Unfortunately space forbids the discussion of the manner in which these affections may be removed. It is mainly by psychic means, and much experience, skill, patience, and insight into the patient's psychic machinery are required¹⁶. The writer hopes to discuss the technique of treatment on some future occasion.

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HERNIA; ITS ETIOLOGY AND RELATION TO THE EARNING CAPACITY OF THE INDIVIDUAL¹

BY ALFRED C. WOOD, M.D.,

Assistant Professor of Surgery in the University of Pennsylvania.

PHILADELPHIA.

THE subject of hernia is not only a well-worn topic, but a very large one. In order to confine my remarks to the time allowed by your Association, and also because the general subject was so ably discussed by your Secretary, Dr. P. Y. Eisenberg, at your meeting two years ago, I shall speak more particularly of but two phases of this affection,—the etiology and the disability suffered by the victims of this condition.

¹Read at Annual Meeting of National Association U. S. Pension Examining Surgeons, June 7-8, 1909, at Atlantic City.

Hernia has probably existed in approximately its present relative frequency since man assumed the upright position. The large number of cases coming under the observation of physicians would appear to have afforded ample opportunity for exhaustive study. It may almost seem, therefore, like unwarranted assurance to dissent from the views that have been accepted and passed down to us by the masters of surgery of the preceding generations.

In "A Dictionary of Practical Surgery" which is said to contain "a complete exhibition of the present state of the principles and practice of surgery," published by Samuel Cooper in 1810, with notes and additions by Dr. John Syng Dorsey, the causes of hernia are said to be either predisposing or exciting. Of the former, mention is made of the large size of the hernial openings, weakness and relaxation of the margins of these apertures, a preternatural laxity of the peritoneum, an unusually long mesentery or omentum, etc.

Of the exciting causes, the writer speaks with more assurance. He says: "The grand cause is the powerful action of the abdominal muscles and diaphragm on the viscera."

Reference to most modern works on surgery will show that the causes of hernia are given almost identically with the above, with slight variation in language, of course, but without the addition of any new factors. It will thus be seen that for a hundred years surgical thought has undergone very little change on this point, and it is probable that similar views were held for a long time prior to the date when Cooper wrote his book.

It will be universally admitted that the increase of intra-abdominal pressure, due to muscular effort caused by jumping, laborious occupations, chronic coughs, dysuria, etc., is the real cause of the protrusion which results in hernia. It is not so clear to my mind, however, that the assumed weakness of the abdominal wall at certain points has been explained properly by the majority of writers. It may be granted that some sort of weakness does exist or the hernia would not be present, but that it is to be attributed to the muscular and aponeurotic structures constituting the abdominal wall, may well be doubted. Take for instance, the case of the inguinal canal, which exists in the potential sense only, as no canal is present under normal conditions.

This so-called canal begins at the internal ring, which is situated in the transversalis fascia about half an inch above the middle of Poupart's ligament, and extends downward and inward parallel with the latter to the external ring in the aponeurosis of the external oblique; it is about an inch and a half in length and contains the spermatic cord. It is supported in front by the skin, fascia, and external oblique aponeurosis, and in its outer half-inch by the internal oblique; below by the union of the transversalis fascia with the strong fibrous Poupart's ligament; above are the arched muscular fibers of the internal oblique and transversalis muscles.

Any increased intra-abdominal pressure presenting at the internal ring in the transversalis fascia is met, therefore, by the internal oblique muscle and the strong aponeurosis of the external oblique. If this pressure presents

posterior to the external ring it is met by the triangular ligament, conjoined tendon and transversalis fascia. We see, therefore, that this region has been well supported. In the vast majority of instances inguinal hernia is of the oblique variety, passing out through the internal ring. Inasmuch as it is perfectly manifest that without intra-abdominal pressure hernia would not form, and as this pressure results from muscular action, the peculiarities of the inguinal canal, as pointed out, are very important. The lower portion consists of the rigid tendinous Poupart's ligament. The upper boundary consists of the arched fibers of the internal oblique and transversalis muscles. As muscular contraction results in the shortening of the fibers between the points of origin and insertion, contraction of the muscles mentioned would tend to straighten out their direction, and hence to close up or still more strongly fortify the internal ring, so that the increased pressure due to the contraction of the abdominal muscles would be met by increased strength at the inguinal region, which would tend to prevent the protrusion of the abdominal viscera. The arched arrangement of the fibers in this situation is due, I assume, to the necessity of making provision for the free circulation of the blood in the spermatic cord, and at the same time to give additional strength during moments of unusual stress. If the structure of the cord were continuously tightly compressed the circulation and nerve supply of the testis might be seriously compromised. In the conditions as we find them, no undue pressure is made upon the structures of the cord under normal conditions; whereas any temporary severe strain calling for more complete closure of the canal, is provided for. As Russell has pointed out, the action of the muscles in this situation is similar to that of a sphincter. I am, therefore, obliged to reject the theory of weakness of the abdominal muscles as a cause of inguinal hernia.

What, then, is the predisposing cause? If this question be limited to the cases observed in infancy, every one would at once reply,—a patulous condition of the funicular process and tunica vaginalis, and this answer would be perfectly correct. Such a hernia is called congenital, because the sac with its open mouth exists at birth and fails to become obliterated promptly as it normally should. If the query be applied to those cases first observed in adult life, the great majority would fall back on the "weakness of the abdominal wall." Such a hernia is said to be "acquired" by a gradual protrusion of some part of the abdominal contents. But why construct one pathology for one period of life, and a different pathology for another period? If we know an inguinal peritoneal sac exists in infancy in so many cases, and this is universally admitted, is it not more reasonable to assume that this sac persists than to believe that it becomes obliterated and a new one forms later? I think it is. A recognition of this fact would go a long way towards solving our hernia problem.

If the foregoing be admitted, then the logical conclusion is that the sac is congenital in *all* indirect inguinal hernias, irrespective of the time of the appearance of the protrusion, and this is the opinion forcibly put forward by Mr. R. Hamilton Russell in several papers, from which I have freely

drawn for this article. Brief reference to the early development of the parts here concerned may not be out of place.

It will be recalled that originally the testis lies in the abdominal cavity behind the peritoneum opposite the lower pole of the kidney, and that it gradually descends so that by the end of the third month of intra-uterine life it has reached the anterior abdominal wall, in the vicinity of what later becomes the internal abdominal ring, where it remains until about the sixth month. In the intervening period the layers of the abdominal wall in the inguinal region undergo evagination, behind which a pouch of peritoneum follows, and descends along the tract of the future inguinal canal. About the beginning of the seventh month this peritoneal pouch is extended downward into the scrotum, and at the same time the testis begins its final descent, reaching its natural position, as a rule, shortly before birth. This process of peritoneum is projected around the gland and spermatic cord, and normally closes during the first weeks of life, beginning at the internal abdominal ring. Recent studies appear to show that this process remains patulous, partially or wholly, in a large number of cases. The explanation for this apparent defect in the developmental processes has not been satisfactorily given, but it may be that it is an example of the persistence of an anatomical peculiarity belonging to an earlier type in the evolution of the human race. This seems probable from the fact that in certain species of animals the process remains open through life, communicating with the peritoneal cavity, the testis being periodically retracted within the abdomen.

If the vaginal process of the peritoneum remains unobliterated in many cases, it will be asked why hernia is not even more frequent, or why it appears in many instances for the first time in adult life. The answer would appear to be that the cavity of the process is extremely narrow, being compressed on all sides by the surrounding structures, and as the development continues the pressure of the latter increases until the mouth of the process is tightly closed, as by a purse-string. In the normal condition, this pressure at the internal ring causes adhesion between the peritoneal surfaces, which adhesion gradually continues until the entire funicular process becomes obliterated. In a certain proportion of individuals, as we have seen, adhesion fails to take place. This open condition of the funicular process is what constitutes the "weakness" that may properly be considered *the* predisposing cause of hernia. As before stated, the grasp of the surrounding structures compresses the funicular process and so reduces its lumen to a very small diameter, in most cases being barely large enough to admit a probe.

A hernia does not form, even in the presence of a patulous process, unless all the necessary conditions are present. It is not every strain that is capable of producing a hernia, and even violent or frequent strains may be resisted. The conditions must all be favorable, the presence of a sac, a certain position of the body, and the insinuation of a certain portion of the viscera at the orifice at the exact moment of a severe strain being necessary. We have all met with cases in which a hernia first appeared in middle life, as the result of very slight exertions, or without known cause. In these instances

the sac must have existed previously, as it is impossible for a hernial sac to form instantly under ordinary circumstances.

Allow me to recite the case of a gentleman who was the head of a very large business concern, who applied himself closely to business and neglected all forms of physical exercise for many years, and until he suffered a nervous breakdown. It was perfectly apparent to me that the most important factor in re-establishing the circulatory and nervous equilibrium of this individual was a proper regulation of his habits, and carefully graduated exercise. Accordingly, I sent him to a private gymnasium in charge of a thoroughly qualified physician and student of physical culture. The patient was first instructed in the use of chest-weights, with the ropes passing over pulleys at the floor. He was to stoop down, grasp the handles attached to the ropes, and gradually rise. The ropes carried very light weights. At the first effort he developed inguinal hernia.

Another very interesting case was recently related to me by a medical friend: A man, aged about 35 years, who was far advanced in pulmonary tuberculosis, suddenly developed a hydrocele. The fluid, however, returned to the abdominal cavity when the patient resumed the horizontal position. He had never had a hernia.

In both of these cases the sac must have been present from birth, but the hernias and hydrocele respectively did not appear until a certain combination of conditions occurred.

With regard to direct inguinal hernia, I shall refer to but two points. In the first place, true direct inguinal hernia is of very rare occurrence, so that it need not occupy our time in this connection. Second, Mr. Russell states that his attention was called to a congenital direct sac, internal to the deep epigastric artery in one instance, by Professor Allen, the specimen having been obtained from a man who had never been cognizant of a hernia.

According to Mr. Russell, the classification of inguinal hernia should be entirely re-cast. In a word, he would apply the name "funicular" to all that are indirect, adding the qualifying term, partial or total, simple or sacculated, interstitial or properitoneal. The direct form, he would call non-funicular inguinal hernia. It is very rare. He does not admit the existence of an acquired inguinal hernia.

In order to understand how these numerous varieties of inguinal hernia take their origin, it becomes necessary to cast back once more to the developmental period. The events which result in the formation of the processus vaginalis have not been observed with any exactness, but certain things are evident. The chief one is that in its extension from the primitive pleuro-peritoneal cavity to the scrotum the funicular process is subject to certain accidents. There is a liability to the occurrence of sacculation analogous to that mentioned in connection with femoral hernia, evidences of which in the inguinal region are most abundant.

It sometimes happens that when this kind of developmental accident occurs the normal descent of the testis is also prevented. In this way is

brought about the double pathological condition of an interstitial or properitoneal sac in association with imperfect descent of the testis.

If we are willing to admit that the vast majority of cases of inguinal hernia depends upon the presence of a congenital sac, we must seek a similar explanation for other hernias, for it would manifestly be an undue tax upon your credulity to ask you to accept a different explanation for the other forms.

In the case of femoral hernias, a careful examination of the hernial sac in many instances will impress one with its congenital origin. This view would at first appear much less reasonable than in the case of inguinal hernias, but a thoughtful examination of Mr. Russell's ingenious explanation, it seems to me, will convince one of its entire probability. This is essentially as follows: At an early period of embryonic development three primary layers are observed. Ventrally two main layers are formed, the splanchnopleure closing in the primitive alimentary canal, and the somatopleure constituting the body-wall. Between these two layers is situated the primitive pleuro-peritoneal cavity lined throughout with mesodermic tissue, on the inner surface of which a layer of cells, flattened and stratified, will ultimately become specialized as the endothelial structure of the peritoneum. During the second month, bud-like projections are extruded from the surface of the body-wall, which are the rudiments of the four limbs. These buds are projections of the whole thickness of the body-wall, and it may quite probably be a normal event for a pouch of peritoneum to be included in the bud, to become subsequently obliterated. Whether this inclusion of a pouch of peritoneum is a normal event, or whether it is a developmental accident, matters not at all. That which does concern us is the fact that such a pouch of peritoneum is not only often formed, but that it often persists; further, that it may occur in more than one situation in the limb, but that its most frequent seat is in the immediate vicinity of the main vessels, and is the future crural canal. This peritoneal pouch having been formed at a very early period it becomes a matter of extreme interest to trace its destiny and to see how it will fare during the period of rapid changes associated with the developing limb.

Russell calls attention to the development of the branches of the common femoral artery which run upwards on to the abdominal wall—the superficial epigastric and circumflex iliac vessels, and the superior and inferior external pudics, which explanation is here omitted, but which has to do with the causes for the direction taken by the respective trunks.

Having made clear the causes that determine the course of the branches of the common femoral, it would seem reasonable to expect that a contemporaneous peritoneal sac occupying a similar position in the evolving limb should in response to the same developmental influence incur a like fate, so that a sac which is of sufficient length and suitably disposed at its inception would assume a position similar to that of the epigastric artery; another will take an outward and upward direction like the circumflex iliac; while another will follow a course corresponding to that of the external pudics. These variations

are made clear by illustrations which represent the branches of the femoral artery on one side, and the favorite positions assumed by femoral sacs on the other, which strongly impress one with the conviction that the developmental influences which determine the course of the arteries and the varied position of the hernial sac are identical.

It would be remarkable if these mesodermic evolutions, which are finally mapped out for us in the tortuosities of the arterial branches, should leave no mark upon the sac which is subject to the same vicissitudes, and we should expect to find some permanent record of their incidence in the shape of irregularities of the sac-wall or sacculi. Those who operate frequently must have observed these sacculations.

The time accorded to this paper will not permit of a discussion of the rarer forms of hernia; let it suffice to say that Russell believes the underlying cause is the same in all. It should be noted, however, that the cases that follow abdominal operations are wholly different from the preceding, and depend upon a real weakness of the abdominal wall. Anyone who has operated upon these so-called incisional hernias must have been impressed with the wide separation of the different muscles, the defect being covered in by a thin layer of cicatricial tissue devoid of strength. The hernia is due to the fact that the muscular fibers were cut, and were not re-united, either because of the necessity of providing drainage, or because the stitches did not hold. These cases have no place in the present paper, and are mentioned only to emphasize the distinction that should be made.

If what has been said is correct, it follows that some of the teachings in regard to hernia must be modified. The whole subject of the treatment of hernias in children must be re-opened. In the light of what seems to be the true pathology, it would appear that the routine practice of applying a truss in the treatment of hernias in childhood is to be condemned. We know that the use of a truss never cures a hernia in adult life, and I venture to express a doubt if many cases are thus cured in children. Undoubtedly the persistent, intelligent use of a truss during the developmental period of life, by retaining the hernia for a long period, allows the structures encircling the inguinal canal to so reduce the caliber of the funicular process that the protrusion does not recur when the support of the truss is removed; but unless the opposing peritoneal surfaces become agglutinated firmly a real cure has not taken place, and such an individual is liable to the development of a so-called acquired hernia as long as he lives. Moreover, what could be less rational than to apply the firm pressure of a truss to the inguinal canal of a developing child? It is comparable to applying a brace for lateral curvature of the spine, or other form of muscular weakness, a practice now recognized as not only useless but positively harmful.

On the other hand, operation in early life, before the protrusion of the sac has existed long enough to dilate the internal ring and inguinal canal, will be followed by a permanent cure, merely by removing the sac. Mr. Russell reports some sixty operations upon children by this simple method, without any relapses. However, if the hernia has existed for a long time-

during which the muscular fibers have become stretched and atrophied from the pressure of the protrusion upon them, it then becomes necessary to correct this condition by providing additional support to the canal, for which purpose perhaps Bassini's operation best fulfills the indications.

The theory of the congenital sac as a cause of hernia appears to be strikingly borne out clinically in the operation for its radical cure. Although a large variety of procedures have been recommended, they all agree in one particular, namely, the necessity for the complete removal or obliteration of the sac. This explains why success has resulted from so many different methods. If the sac is properly disposed of, there is little tendency to recurrence, unless the muscles are considerably stretched and atrophied by the pressure of the hernia from within, or a truss from without, or both.

From what has been said, it will be inferred that traumatism may be an exciting cause of hernia in rare instances, but only provided a sac already exists. The term "traumatic hernia" is here employed to indicate a hernia that results from accident, and appears at once, in contrast with the cases that develop slowly in consequence of repeated muscular strains. It should be understood, however, that true traumatic hernia is of very rare occurrence. Perhaps I can best emphasize this point by quoting two cases reported by Dr. W. H. Allport, of Chicago, in the *Journal of the American Medical Association*, May 8, 1909. The first is that of a man, 28 years of age, who was caught between a railroad train and a heavy baggage cart, receiving contusions about the left groin and back. He remained at home three days. About a week later he consulted a surgeon for a small swelling in his left groin. A diagnosis of hernia was made, and the man brought suit upon the ground that the injury had caused the hernia. A truss was applied but could not be worn on account of pain. Another physician was consulted. The previous diagnosis was confirmed and a pad and spica bandage applied. During the subsequent four months the man saw eleven more physicians, all of whom concurred in the diagnosis of "traumatic hernia." Several of these men went on record in writing to this effect. Two of the railroad surgeons reported to the company that "the hernia was a pretty bad one." The pain had become so severe that the man subjected himself to operation, against the advice of his attorneys, having previously seen two other surgeons, who accepted the views of the previous medical men, an opinion, Dr. Allport says, in which he "incontinently concurred." Thus, no less than eighteen physicians had examined the man and pronounced the inguinal swelling hernia. At operation, the swelling was found to be an abscess, having its origin in the "third or second lumbar vertebræ," and appearing in the groin external to the deep epigastric artery. The injury might have caused the disease of bone, or it may have begun previously, as the man is described as "tall, lanky, and unhealthful looking."

The second case was that of a laborer, 26 years old, who fell down an elevator shaft, fracturing the right leg and contusing the right thigh and sacral region. A hæmatoma formed in the latter region. In the left inguinal region above the inner third of Poupart's ligament a mass was found the

size of an apricot, at first thought to be a traumatic hernia, but later the diagnosis was changed to "hæmatoma of unknown origin." At operation, the swelling was found to be, "the lacerated and upturned distal end of a proximal fragment of the adductor longus, that muscle having been completely torn asunder by the accident."

These cases must impress us with the necessity for the most careful examination and study of a supposed traumatic hernia.

The disability caused by hernia depends upon many factors,—the age and occupation of the individual, the kind of hernia, its size, and whether it can be controlled by an ordinary truss. The presence of hernia definitely bars the individual from certain occupations, such as the Government services—the army and navy, and I believe the post-office department. Some forms of hernia are more disabling than others, and the size is an important factor in determining the degree of disability. It is a matter of common experience that cases are met with in which the truss does not retain the hernia unless a degree of pressure is applied much greater than the individual can bear for any length of time. Certain laborious occupations accentuate markedly the difficulties ordinarily experienced from a hernia, while other sedentary positions may make such a slight demand upon the individual that no inconvenience is experienced.

Taking all cases, therefore, the incapacity ranges from an imperceptible degree to absolute inability to perform any heavy work. Small inguinal hernias that are readily controlled by a truss perhaps cause the minimum of disability,—say 5 to 10 per cent. Larger hernias, those not held up by a truss, and those that are irreducible in whole or in part, reduce distinctly the earning capacity for many occupations, which, in figures may be 10 to 90 per cent., according to the local conditions and the occupation of the individual.

Femoral hernias never become very large, but they are more difficult to control than inguinal hernias of equal size; they are more apt to become strangulated, and hence are more liable to assume a serious condition.

It may be stated positively that the disability caused by a hernia increases with the age of the patient and also with the duration of the hernia, so that the inconvenience and the loss in earning capacity are not stationary, but progressive, for each individual.

I know of no facts upon which we may judge of the frequency of hernia with any degree of accuracy. The number of cases, however, must be very large, the estimates of different writers varying from 2 to 12 per cent.

It is rather popular at the present time to consider the matter of disease and disability from the economic standpoint. For this purpose, let us assume that 5 per cent. of the whole population are afflicted with hernia. We would then have 4,000,000 cases in this country. Of these, 3,000,000 would be in males, and at least 1,500,000 in males over 21 years of age. Suppose further, that the average wage of these men be \$1.50 per day, the total daily earnings would be \$2,250,000. Now, if the average disability of the whole number be no more than 10 per cent., the daily economic loss would be \$225,000, or

\$1,350,000 per week. Large as these figures are, I believe they are understated, and if the facts could be ascertained, the showing would be much worse.

In this connection we must not overlook the mortality of hernia, for it has a distinct mortality. A recent United States census report shows that one death in each 600 was due to hernia. The additional loss thus sustained would greatly increase the above figures.

In a collection of 1286 deaths from hernia, about 12 per cent. were in children under one year of age, which shows that even at this period of life a hernia is not to be neglected.

The points that I especially desire to emphasize are:—

1. The congenital origin of the sac is the true predisposing cause of hernia.

2. A truss never cures a hernia in adult life, and rarely during childhood; its routine use is therefore to be condemned.

3. The proper way to reduce the great loss caused by disability, and the mortality incident to hernia, is to correct the condition as soon as practicable after its appearance by a properly performed operation.

Editorial

A PSYCHOTHERAPEUTIC HOSPITAL.

THE subject of psychotherapy, now so widely being discussed, is in a fair way to receive the same conscientious, critical research which is accorded to all other branches of scientific therapeutics.

Information is just received that a lady of Boston, Massachusetts, Mrs. Martha S. Jones, has given her beautiful estate and magnificent parks near Portsmouth, N. H., to Dr. Boris Sidis, of Brookline, Mass., for the purpose of establishing a private hospital. This is a long step forward in the direction of earnest effort to put to the test not only the practical utility of mental influence upon disease, but here there will be pursued those studies of practical psychology for which Dr. Sidis has so well earned the confidence of the professions both of medicine and of psychology.

The subject of psychopathology is clearly as important as that of the morbid changes in body-growth. Indeed, by reason of the supremacy of the mind, its paramount complexity and delicacy, doubtless this will soon be regarded as of even greater importance. While a brilliant group of men have labored successfully to reduce all cognate subjects to a practical working basis, the profession at large has held aloof from these new lines of thought, and much doubt and some condemnation has been expressed. This is largely due to lack of psychological and psychopathological training of the students in our medical schools; these being all given up to the study of the body, to physical diagnosis, to the treatment of all ailments by mechanical and chemical

means. We do not encourage the growth of men like Kraepelin, Krafft-Ebing, Zichen, etc., and we have deliberately discouraged the work of psychotherapy and psychotherapeutics. We look for a change in the attitude of the medical profession. Instead of mental and religious cults they will now study in earnest the experimental and clinical work of our psychopathologists.

Above all will the more judicious, not only in the two professions of medicine and psychology, but among mankind at large, welcome exactitude and definiteness in the scope and limitations which will thus be exhibited.

The cloud of spiritual and mental healing cults which has overswept the land (and some to most annoying lengths) will rapidly die out and an exact science of abnormal mental life will take its place.

America is behind Europe as to research in psychopathology and psychotherapy. There is Janet in Paris, Bernheim in Nancy, Freud in Vienna, Jüng in Zürich; all of them working in connection with established institutions. In this country there is no systematic scientific work being now done in psychopathology and psychotherapeutics in connection with any of our medical schools. Even the medical journals, such as the *Journal of the American Medical Association*, give more attention to the religious epidemics of occultism, Christian Science, and the like irregular outbreaks of optimistic medico-religious pseudo-therapeutics, than to any attempt at presenting the subject of psychopathology in a dignified, scientific fashion, as has been done by Morton Prince and Boris Sidis. They have been working for years, meeting with criticism, doubt and opposition of those who are unable to fairly judge of the strength of this movement.

At last Dr. Sidis is in a position to find safe outlet for the expenditure of his most valuable energies. He expects to establish in this new hospital a laboratory in which work will be done systematically and thoroughly. This will be of the same character, on the same lines as set forth in his previous monographs and books. None of the universities here have established chairs of psychopathology and psychotherapeutics. He can and should found a school of theoretical and practical teaching in connection with this hospital in which he can give to physicians instruction in these important branches of medicine.

J. MADISON TAYLOR, A.B., M.D.

Cyclopædia of Current literature

ALCOHOL, RELATION OF, TO IMMUNITY.

Alcohol in small quantities has no action on the phagocytic activity, nor has it any action on the phagocytic activity until it is present in 12.5 per cent. strength. Small quantities of alcohol injected into rabbits may stimulate the production of antibodies

temporarily. A large dose lowers the opsonic index for 24 hours. Continuous moderate doses cause a permanent lowering of the opsonic index. The author found that the reacting mechanism to vaccines is much less effective in alcoholized rabbits than in normal rabbits; the difference is still more

marked when living micro-organisms are used. P. R. Parkinson (*Lancet*, November 27, 1909).

ANEURISM, DELAY OR RETARDATION OF THE PULSE AS A SIGN OF.

In cases of thoracic aneurism, delay or increased retardation of one of the radial pulses does occur. The same delay may or may not be present in the case of the corresponding carotid pulse. If the idea, based on experimental physics, be correct, that delay of the pulse-wave is only produced as the result of the wave passing through the aneurism, then the phenomenon of delay should be of most important diagnostic aid in the localization of the aneurism. Digital examination is not a reliable test of the presence or absence of delay. The finger may miss the delay when present, and may diagnose it when absent. A more delicate instrument, such as the clinical polygraph, is necessary. Leonard Findlay (*Practitioner*, December, 1909).

ANGINA PECTORIS, DIAGNOSIS OF.

The diagnosis of angina pectoris, at least in its milder forms, cannot be made from the history alone, is contended by the author. The other forms of cardiac pain, of toxic or neurotic origin, the latter especially in women, may exactly simulate a true angina pectoris. After allowing due weight to the age, sex, and detailed history of the patient, it is necessary to ascertain the presence or absence of signs of organic disease at the root of the aorta. On this hangs an enormously important decision. When plain signs of general arterial or aortic disease co-exist with a history of precordial pain, there need be no hesitation in making a positive diagnosis of true angina pectoris. But

it is otherwise in patients with cardiac pain in whom, as may happen, the accessible arteries are soft, and who do not present signs of gross aortic or pericardial lesions.

In the election between true and false, organic or functional, there is one physical sign which the writer believes casts the controlling vote. It is so slight, and apparently so insignificant, that one almost hesitates to mention it. It is simply a slight clicking sound, of a harsh or rough quality, accompanying, or following at a barely perceptible interval, the sound of aortic closure. It is not an accentuation of the closure sound of the valve, such as the loud, clean, "cork and bottle" aortic second sound, which is significant of high arterial tension. Nor is it to be confused with a reduplication of the second sound. The slight harsh click, to which the writer refers, is said to suggest to the ear a definite roughening or thickening of the edges of the aortic cusps. When autopsies have been obtained the findings have justified such an interpretation of this auscultatory sign. If, then, the aortic cusps are roughened, it is certainly a fair inference that the root of the aorta shares in the diseased process. The writer recalls but two cases of true angina in which this sound has not been heard. G. R. Butler (*Archives of Diagnosis*, October, 1909).

ARTERIOSCLEROSIS, OCULAR SYMPTOMS OF.

The writer reports twenty cases and concludes that the ocular manifestations of arteriosclerosis are numerous and varied. From the diagnostic standpoint it is the group of signs which occur in the early stages of the disease that are especially important to the general physician. Many patients who think

themselves in good health seek the oculist for presbyopic correction in whom a careful ophthalmoscopic examination will reveal the signs, perhaps the very earliest, of beginning arteriosclerosis, and this is the time of all others when something can be done for these patients to avert the more serious later stages of the disease. W. E. Bruner (*Annals of Ophthalmology*, October, 1909).

CHRONIC ULCER OF THE LEG, TREATMENT OF.

When a traumatic ulcer will not heal, there is some such factor as sepsis behind it, or perhaps the unfavorable influence of varicose veins. The writer believes that 90 per cent. of these sluggish ulcers are due to syphilis. The crenation of the margin is another feature of these specific sores. In such cases the amount of alcohol consumed should be reduced to the lowest possible limit. Mercury and iodids should not be given internally together. Organic iodids should be preferred to the metallic. They should be well diluted and may be alternated with courses of strychnin particularly when, after a period of improvement, the ulcer becomes sluggish. If the two remedies, mercury and the iodids, be given together, the red iodine may occur in the system and much pain will be felt in the ulcer. For a general antiseptic application the author advises a dram of boroglycerid in half a pint of hot water. Locally, mercurials may be used in the form of the black or yellow wash, or solutions of carbolic, 1 to 100, or even iodine tincture, diluted one to 4 or 5 of hot water, may be used. For ointments the ammoniated mercury or the yellow oxide are preferable. If the dry treatment be preferred three drams

of zinc oxide and half a dram of calomel may be mixed with enough "*kieselguhr*" to make an ounce. X-rays have benefited some cases. There are some ulcers which resist cure even when given a long rest. This is probably due to the tethering of the ulcer edge to the underlying bone. To free these edges, fomentations should first be used to reduce the septic complications of the ulcer; then the whole of the ulcerated surface should be scraped with a Volkmann's sharp spoon and the whole of the edge undercut with a scalpel. The edges may then be drawn together and if at the same time the margin of the skin is freshened, a very thin border being cut off, the healing process will probably start afresh and the granulation will be rapid and sure. W. Evans (*Lancet*, November 13, 1909).

CREOSOTE TREATMENT OF PULMONARY TUBERCULOSIS.

By the combined, persistent, intelligent use of beechwood creosote internally and by inhalation, many patients may be saved who otherwise would die. In nearly all cases, no matter what the stage of the disease, much relief to symptoms may be obtained. This treatment is simple and inexpensive, and interferes with no other rational action. It greatly supplements that action. Creosote treatment is of great value as a preventive treatment, when pulmonary tuberculosis is a menace to the individual, either by reason of constitutional tendency, exposure to infection, or both. To judicious rest, when required, fresh air, and proper food, add creosote treatment, with or without lime salts, and there is at present little or nothing in the way of further treatment to insist on. B. Robinson (*Medical Record*, November 20, 1909).

DYSPEPSIA OF OLD AGE.

Investigations by the writer seem to indicate that out of every one hundred cases of chronic dyspepsia in persons over 65 years of age, 66 are secondary to organic diseases of some important organ of the body, while the remaining 34 owe their symptoms to a progressive degeneration of the secretory structures of the stomach and intestines. In the former class the disorder of digestion usually takes the form of a chronic gastritis due to disease of the kidneys, prostate, heart, lungs, liver, pancreas, chronic gout or inefficient mastication, while in about 7 of the 66 cases, or in 10.6 per cent. of the entire number, long-continued hypersecretion, due to chronic ulcer in the vicinity of the pylorus, gall-stones, or diseased appendix is the cause of the constant indigestion. W. S. Fenwick (*Lancet*, November 6, 1909).

EHRlich's THEORY WRONG.

The writers discuss the side-chain theory of Ehrlich in the light of the work of recent investigators. The evidence adduced seems to show that the theory is no longer tenable. The conclusions which they emphasize are as follows: The identity of the toxin with the antigen has not been proven; facts are against it, namely, that antibodies may be formed without permanent binding of the toxin and vice versa; that bodies which bind an antitoxin may be separated from those which cause its formation; that a binding in Ehrlich's sense does not necessarily lead to destruction of the receptor; that the cell receptor is not identical with the antitoxin in the blood; that consequently antitoxin in the blood cannot be receptors thrown off from cells; and that, therefore, Ehrlich's theory is wrong. I.

Bangs and J. Forssman (*Münchener medizinische Wochenschrift*, August 31, 1909; *Boston Medical and Surgical Journal*, September 30, 1909).

EPILEPSY, ETIOLOGY OF.

All epilepsy is not due to one cause but it is due to a complex of interacting causes, and probably the factors are not in relative proportion in all cases, that is, a person with nervous instability would require a smaller dose of toxin to cause an explosion than another with a firmer and more poison-proof nervous structure, while impaired intestinal function would further pathogenic growth, etc. Furthermore, the alimentary channel may not in all cases be guilty as a contributory party. But the author holds that at times there is circumstantial evidence of it, and in these cases it is not unreasonable to infer the existence of something entogenous (at least not immediately introduced), and that something to be a low order of vegetable life. Treatment based on this theory has, in the author's experience, been attended with good results. Among the various remedies which at different times have been proposed are the zinc salts, salicylates, creosote, borax, tar (a lay remedy) and the sulphocarbolates. A. King (*British Medical Journal*, November 13, 1909).

INFANT FEEDING, DISTURBING ELEMENTS IN MILK IN.

The salts of cow's milk have a pathologic influence on the infant, causing a condition of spasmophilia or tendency to convulsions, which may go to a spasm of the glottis, tetany or an eclampsia. The treatment consists simply in feeding for a period with a salt-free diet.

The sugar of cow's milk is not tolerated by some infants, acting as a poison

and causing a distinct symptomatology, a condition called sugar intoxication, which disappears promptly on the elimination of sugar from the food. It is also associated at times with those disturbances, the most extreme of which is marasmus, in which the infant has an intolerance for fat. The hunger-cure is practiced in these conditions, either the sugar or the fat, or both, being eliminated from the milk until the symptoms have improved. F. C. Neff (Journal American Medical Association, December 18, 1909).

INTESTINAL PERFORATION DURING TYPHOID FEVER IN CHILDREN.

Typhoid fever is very rare under five years of age; after this period it is not infrequent, being about half as common as in adults. The favorite time of perforation is at the end of the second and during the third week. The diagnostic symptoms, in the order of their importance, are pain, tenderness, rigidity, fall in temperature, rise in pulse-rate and collapse, vomiting, chill, and rising leucocytosis. The mortality after operation is influenced by the severity of the disease, rather than by the protracted course. It is lower under ten years of age than after this time. The mortality is lower in relapsed than in unrelapsed cases. The average mortality is somewhat less than 50 per cent. and at least 25 per cent. lower than in adults. The earlier the operation is performed, the better the prognosis. The technique of the operation does not differ materially from that advisable in adults, except in the use of a general anæsthetic and the even greater necessity for rapidity in operation and avoidance of meddlesome surgery. J. H. Jopson and J. C. Gittings (American

Journal Medical Sciences, November, 1909).

MERCURY SUCCINIMIDE IN SUPERFICIAL TUBERCULOUS LESIONS.

Remarkable results are reported by the author from the use of mercury in three obstinate cases of superficial tuberculosis, two of scrofuloderma and one of extensive pharyngeal infiltration. He gives one-fifth of a grain of the succinimide subcutaneously every other day, and one-fourth of a grain of the protiodid by mouth three times a day. Local curetting and cauterization. and X-ray exposures gave no permanent relief until supplemented by the mercury. R. Hertzberg (New York Medical Journal, November 20, 1909).

OBEILITY, WITHDRAWAL OF MEAT IN TREATMENT OF.

A strict vegetable diet has been found extremely useful in obesity. The writer believes it is the easiest, safest and most effectual means of correcting the tendency to undue corpulence without impairing the general health. The aim is to satisfy without giving many calories, and beverages are allowed unrestricted. Vegetarians never present the picture of full cheeks and rounded outlines, the difference being mainly in lesser deposits of fat, just what is needed in the treatment of obesity. The writer keeps the patient on a strict vegetable diet for from 4 to 6 weeks, then allows from 150 to 200 gm. of lean boiled meat 3 times a week or once a day. This diet is kept up for months without trouble and protects those inclined to obesity from returning corpulence. If the weight begins to increase he drops the meat again for 4 to 6 weeks. He generally supplements the dietetic regulations by exercises and

hydratic procedures, but these alone are insufficient. A record of several cases is given in which the weight dropped nearly 40 pounds in the course of a few months by this dieting alone. Fatty heart and digestive disturbances are the main contraindications. A. Albu (*Therapie der Gegenwart*, November, 1909; *Journal American Medical Association*, December 18, 1909).

PERICARDITIS, ANATOMICAL STUDY OF.

Pericarditis is a lesion secondary in nature, rarely or never primary. The complication, for such it must be considered, is in most cases not in itself serious except when of the suppurative variety, and in all instances it is more noteworthy as indicating the general condition in which it arises than on account of its own importance. It is, therefore, of little relative clinical importance, except as a diagnostic index, and in suppurative cases. True myocarditis is infrequently associated with pericarditis, but myocardial degeneration is commonly found, and is due in most instances not to the pericarditis, although generally caused by the same condition as the pericardial inflammation. Death rarely results in pericarditis from this lesion. Independent myocardial degeneration, leading to dilatation of the heart, and especially fatty degeneration of the myocardium, is a predisposing or determining factor toward pericarditis. Overaction of the heart may induce pericardial inflammation. Serofibrinous pericarditis is in most instances an evidence of generalized bacteremia.

Chronic adhesive pericarditis is a lesion of great frequency, often impossible of diagnosis, and in itself of very little clinical significance or importance. Serious symptoms arise from adhesive

pericarditis only when the myocardium itself is seriously diseased, either concomitantly or quite independently. The signs usually cited as characteristic of pericardial synechia develop only when mediastinal inflammation or adhesions of marked degree are present in addition to the pericarditis. Harlow Brooks and Lansing Lippencott (*American Journal Medical Sciences*, December, 1909).

RHEUMATIC HEART DISEASE IN CHILDREN.

Rheumatism is considered by the writer next in importance to tuberculosis among the diseases of early life. The following are the evidences upon which he chiefly relies in forming an opinion in these cases: (1) The presence of subcutaneous nodules. These, according to the author, nearly always indicate the existence of active heart disease, especially recurrent and relapsing cases. (2) Evening fever. This, without previous cause, excites a suspicion of possible fresh heart inflammation. (3) Joint pains, however slight and transient, always indicate the need for most careful observation of the heart. (4) Any sudden development of, or increase in, anæmia is a very suspicious sign of heart trouble. (5) Excessive and persistent rapidity of the pulse. In pericarditis he has never found it necessary to use surgical measures or to tap. J. W. Carr (*Practitioner*, November, 1909).

SUPRARENAL DISEASE, ORGANOTHERAPY OF.

The postmortem findings in 44 cases of various suprarenal affections are reported by the writer, all confirming the existence of a sclerous inflammation of the suprarenals in the syndrome of

Addison's disease, as also with mere bronzing of the skin and mucosæ and with the abnormal pigmentation sometimes observed in the tuberculous. In 20 other cases of sclerosis of the suprarenals, encountered in the course of 900 autopsies of adults at the Hotel Dieu, the diagnosis had been uncertain on account of the absence of pronounced bronzing. Suprarenal insufficiency is suggested by a combination of one or more circulatory disturbances (small unstable pulse, low arterial tension, the "white line" or track of pallor that follows when a blunt instrument is drawn along the abdominal wall, tachycardia and chilliness); digestive disturbances (anorexia, vomiting, diarrhœa or constipation); toxic nervous disturbances resulting from irritation of the various nerve plexus around the suprarenal capsules, and general disturbances (anæmia, emaciation, considerable and progressive amyotrophy). The diagnosis is confirmed by the benefit from organotherapy; benefit is also liable in cases of inoperable cancer of the suprarenals.

The writer advises ingestion of sheep or calf suprarenal capsules fresh or desiccated in a vacuum, or subcutaneous injection of the whole gland. The diagnosis may be facilitated by hastening the development of bronzing by measures for revulsion. E. Boinet (*Bulletin de l'Académie de Médecine*, November 2, 1909; *Journal American Medical Association*, December 18, 1909).

TOXÆMIA OF PREGNANCY, RELATION OF THE THYROID GLAND AND THYROIDISM TO.

The thyroid gland is, in all probability, concerned in promoting nitrogenous metabolism. There is considerable evi-

dence that the thyroid gland normally hypertrophies during pregnancy, and plays an important part in the increased nitrogenous metabolic processes incident to that state. It is very probable that the toxæmia of pregnancy is largely dependent upon faulty metabolism, at least an insufficient metabolism is an accompaniment which greatly adds to the seriousness of the condition. Failure of the thyroid gland to hypertrophy during pregnancy is probably followed by insufficient metabolism, and may result in the various forms of toxæmia of pregnancy.

Graves's disease, by materially altering the quantity and quality of the thyroid secretion, has an important influence upon metabolic processes, therefore if associated with pregnancy, owing to the increased metabolism incident to that state, it becomes a grave complication. When there is a failure of the normal hypertrophy of the thyroid gland during pregnancy, and when there is a diseased thyroid, as in Graves's disease, the administration of thyroid substance, by supplying the deficiency of the normal thyroid secretion and by diuretic action, may materially improve a faulty metabolism, and thus have a favorable influence upon the manifestations of the toxæmia of pregnancy. The use of a saline extract of thyroid proteids made from fresh normal human glands is much more efficient in rapidity and reliability of action than the sheep thyroids as ordinarily prepared, therefore much more satisfactory results may be expected from its use. The hypodermic administration of thyroid proteids is greatly superior to oral administration, especially when used in cases of toxic vomiting of pregnancy, or in eclampsia.

As the whole subject is yet very obscure, much further research work

along the same lines and many clinical observations are essential to a more definite understanding of the relationship of the thyroid gland to toxæmia, but in view of some results already obtained the field is at least a promising one. It is not improbable that further research may show that the parathyroids have an important relation to the manifestations of the toxæmia of pregnancy. G. G. Ward, Jr., (Surgery, Gynecology and Obstetrics, December, 1909).

TYPHOID FEVER, RUPTURE OF SPLEEN IN.

Enlargement of the spleen to some degree is constantly associated with typhoid fever, and splenic rupture occurs more frequently than is clinically recognized. Many cases of lineal rupture have gone to death undiagnosed. Many such cases have been diagnosed perforation, and, because of medical prejudice, have been denied surgical help. It occurs most frequently in the beginning of the third week, and then during the actual stage of convalescence. This latter is probably explained by muscular effort. Any reference to pain on the part of the patient, under the left costal arch, should put the attendant on his guard. The normal spleen cannot be palpated satisfactorily, and does not have to assume great dimensions for spontaneous rupture. The enlarged typhoid spleen should never be handled, but should be touched daily. The marks upon the skin, with the date at the end of the line, would indicate the increase in size.

In all cases of typhoid, an ice-bag should be constantly applied to the spleen. In cases of enlargement the patient should be bathed most gently and carefully. A sudden increase in the pulse-rate, 20 or 30 beats, at any time during

the course of this disease, should be investigated thoroughly. If this increased pulse-rate is attended by evidence of shock (hæmorrhage), the attendant should be notified instantly. If the liver dulness is not obscured and a rapidly rising temperature soon sets in, rupture of the spleen is the tentative diagnosis. Pain is an insignificant diagnostic sign of rupture. On diagnosis, infusion and Fowler's position should be instituted, immediately before operating. The use of adrenalin, ergot, and iron preparations would seem to be of little value. The only hope for recovery is in operation. In the course of operation for intestinal perforation, the spleen should be gently palpated through the abdominal incision and, if like a bag of molasses, should be removed.

All the grave complications of typhoid fever are essentially surgical. A typhoid state is no contraindication for operation. Aspiration of the pus tumor can be carried out. Continuous peritoneal lavage with normal salt solution by means of two glass tubes, the giving one in the upper end of the incision (subdiaphragmatic) and the receiving tube a suprapubic stab, should be employed after removal of the organ. Roentgenography may be employed in suspected cases. R. C. Bryan (Annals of Surgery, November, 1909).

TYPHOID SPINE.

The sequela of typhoid fever, known as "typhoid spine" is not a neurosis; it is characterized by more or less definite, local, pathological lesions which are sufficient to account for the symptoms. Until the pathology is better understood, the name "typhoid spine" is perhaps preferable to the term "typhoid spondylitis," or the spondylitis may not always be present, and again there may

be a cord lesion of mild form in some cases. It is a rare affection with a good prognosis, though usually a slow course. The most essential point is an early diagnosis, for with early treatment it is robbed of most of its serious symptoms. Jasper Halpenny (Surgery, Gynecology and Obstetrics, December, 1909).

Book Reviews

A TEXT-BOOK OF HUMAN PHYSIOLOGY, Theoretic and Practical. By George V. N. Dearborn, A.M. (Harv.), Ph.D., M.D. (Col.), Professor of Physiology in the Medical and Dental Schools of Tufts College, Boston, etc. Octavo of 550 Pages, with 300 Engravings and Nine Plates. Philadelphia and New York: Lea & Febiger, 1908.

This new work on physiology exhibits several new departures from the usual lines of treatment. The reader is frequently brought into touch with the biological aspects of physiology, reference being made, wherever appropriate, to parallel physiological processes occurring in the animal scale or in plants. A chapter on the physiology of the mind has been introduced, in which the author emphasizes the close connection and interdependence of the mind and the organic functions in general. He limits himself to a description of those aspects of the mental process in which this relation is most marked. In a number of places the author has also left the beaten track in adding material bearing directly on practical medicine; e.g., the various kinds of abnormal respiratory phenomena. The forms of diet used in various diseases, have also been introduced in the respective sections. Another feature is the use of numerous diagrams intended to facilitate comprehension of the different processes and functions, including cell-metabolism, the constitution of protoplasm, the functions of the various digestive organs, the theories concerning urinary excretion, thermotaxis, the functions of the blood and lymph capillaries, of the skin, etc. The work contains the usual chapters on protoplasm and the cell, the nervous system, respiration, foods and digestion, nutrition and metabolism, the blood and lymph, the circulation, the skin, sensory organs, muscles, and on reproduction and development, besides the unusual chapter on mental function already mentioned. The appendix contains a 70-page section giving directions for elementary experimental work; a list of physiological topics suitable for written dissertations or for discussion in class; and a number of conversion tables.

The book is intended for practitioners and students, as the author states in the preface. It covers the ground of known physiological facts in a thoroughly satisfactory manner, purely theoretical considerations being in most cases omitted. This characteristic of the work, together with its compactness, its directness and clearness of statement, make it unquestionably one of the best text-books now available with which to begin the study of physiology. The originality of treatment already alluded to serves only to add to the interest of its pages and causes it to impart a breadth of understanding not generally obtained from text-books on this subject. The mechanical features of the work have been well taken care of.—C. E. DE M. S.

DISEASES OF THE STOMACH. By Dr. I. Boas, of Berlin, Specialist in Gastro-Enteric Diseases. Translation from the Fifth German Edition, by Albert Bernheim, M.D. (Freiburg), Assistant to the late Dr. D. D. Stewart at the Philadelphia Polyclinic Hospital and Post-Graduate School. Octavo of xvi + 730 Pages, with Sixty-five Engravings and Five Plates. Philadelphia: F. A. Davis Company, 1908.

A book coming from the pen of so eminent a specialist as Dr. Boas requires no laudatory introduction. Replete with the conclusions reached after an extended experience in the diagnosis and treatment of gastro-intestinal diseases, the work cannot fail to be of interest. The present translation places Dr. Boas's book within the reach of the American practitioner, and will no doubt prove a welcome addition to his library in view of its eminently practical nature, and because of the relatively great frequency with which gastric disorders are encountered. The work, indeed, was written primarily for the general practitioner, though also suitable for the specialist and for the student in his collateral reading. Purely theoretic considerations have been passed over wherever possible, the aim being to give the book the greatest clinical value.

After preliminary remarks on the anatomy and physiology of the stomach, the author takes up the various methods of examining the patient in order to establish a diagnosis. The first chapter under this heading, that on the "anamnesis," consisting of a well-arranged

series of questions permitting an exact analysis of the patient's symptoms, followed by a concise statement as to the diagnostic value of each of these symptoms, is a very useful one and furnishes an example of the practical character of the book. Subsequent chapters include the data yielded by physical examination, together with a complete discussion of the methods of "functional diagnosis" by examination of the stomach-contents, which have become, since the introduction of the use of the stomach-tube, of such great significance in gastric diagnosis, even comparable, according to the author, to that of urinalysis in renal disease.

The succeeding section of the work is on general therapeutics and diet. Indications are given for the various dietetic measures, mineral waters, and for the physical methods of treatment (massage, electricity, hydrotherapeutics, etc.), lavage and the gastric douche, the administration of acids or alkalies, artificial ferments, bitters and stomachics. The author emphasizes the curative value of non-medicinal measures as exceeding that of drug remedies, and in many cases looks for a cure primarily to "an individualized, rational way of living." The above general subjects occupy one-half of the volume. The second part considers the special disease conditions of the stomach, together with their diagnosis and therapeutics. A number of histories of personal cases have been inserted in small type. The portions on differential diagnosis are especially to be commended; also the chapters on motor insufficiency and the gastric neuroses. A few insertions in brackets bearing upon work done in this country have been made by the translator. At the end of the book are indices of subjects and of authors.

The work is to be strongly recommended as one of unusual interest and practical value. While carefully written, it states in no uncertain terms the personal views of an expert clinician, which have both originated in and been tempered by a long and well-studied experience.—C. E. DE M. S.

A TEXT-BOOK OF PHYSIOLOGICAL CHEMISTRY. By John H. Long, M.S., Sc.D., Professor of Chemistry in Northwestern University Medical School. Second Revised Edition. Octavo of 396 Pages, with Forty-two Illustrations. Philadelphia: P. Blakiston's Son & Co., 1909. Cloth, \$2.50, net.

Long's Chemistry has deservedly become a favorite with medical students, in part because of the care which the author has exercised in selecting only the essentials of the subject and making of the work a compact yet sufficiently complete text-book. A few less important facts have been inserted in small type. The author discusses first the nutrients, i.e., those substances which are ingested for the growth or maintenance of the body. In the second section the ferments and the chemistry of the digestive juices are taken up. This is followed by the section on the blood, tissues and body-secretions. The fourth and final section considers the excretions, and includes a chapter on the "energy equation," involving the potential energy of food, heat radiation, internal work, and a discussion of the dietaries suitable for different kinds of work. Numerous experiments bearing on the substances described in the text have been inserted in small type; they add much practical value to the work. All the important tests for various classes of compounds are included. In this, the second edition of the book, the necessary changes have been made to bring it up to date. A new and practical chapter on the analysis of urine has also been added. On the whole, Professor Long's work is a very satisfactory text-book, and will serve likewise as a handy work of reference. It is well-written and easily understood. The type and paper are also excellent.—C. E. DE M. S.

INTERNATIONAL TREATISE ON PATHOLOGICAL PSYCHOLOGY (*Traité International de Psychologie pathologique*). Written under the direction of Dr. A. Marie, of Villejuif, and edited by Profs. Bechterew, of St. Petersburg; Clouston, of Edinburgh; Grasset, of Montpellier; Lugaro, of Modena; Magnan and Raymond, of Paris; Pilez, of Vienna; and Ziehen, of Berlin. Vol. I.: *General Psychopathology*. Octavo, xii + 1028 Pages, with 353 Illustrations. Paris, 1910: Felix Alcan, Publisher, 108 Boulevard St. Germain. 25 francs and postage.

Dr. Marie has secured for this work the collaboration of most eminent specialists from various countries, believing that an international presentation of the subject—a well-balanced combination of the data acquired by scientists in different centers of learning—would be of scientific as well as sociologic and philosophic interest.

This, the first volume of the series, begins with a chapter by Prof. Grasset, on the relations of psychiatry to neurology, in which he brings out the close union existing between the two branches, and a chapter by Prof. del Greco, on the history and evolution of the science of psychiatry. Dr. Marie follows with an excellent section on psychiatric anthropology, in which are discussed the various anatomical changes occurring among the insane as evidences of degeneracy. This section includes numerous and valuable illustrations. Prof. Mingazzini considers the alterations of the cerebral convolutions and fissures found in the insane, and Dr. Marie adds a short section on the chemistry of the cerebrum. The succeeding chapters enter in great detail into the disturbances of function that may be present in various

organs of the body among the insane, and the general and laboratory methods available for their detection in the living subject. The gross and microscopical pathology of the nervous system is then considered to the extent of 250 pages.

The second portion of the volume embodies a most interesting and suggestive chapter on the evolution of the human mind at the period of puberty, and a final section of 200 pages on the methods of examination of patients, considered from the clinical aspect as well as from the standpoint of objective psychology, pedagogy, and legal medicine. Among the contributors to this volume not above mentioned should also be noted Profs. Bechterew, Marin-esco, Mally, Marro, Ferrari, Carrara, and Drs. Laignel-Lavastine, Levaditi, Dide and Klippel.

The second volume, which is to consider the general subject of abnormal mental states, and the third and concluding volume, on therapeutics, are expected to appear in the course of the year 1910. This treatise will undoubtedly prove to be an important contribution to the science of psychiatry. It should occupy a high place among standard works of reference, being the product of the united efforts of so many eminent specialists in this line.
—C. E. DE M. S.

A TEXT-BOOK OF GENERAL BACTERIOLOGY. By Edwin O. Jordan, Ph.D., Professor of Bacteriology in the University of Chicago and in Rush Medical College. Octavo of 557 Pages, Illustrated. Philadelphia and London: W. B. Saunders Company, 1908. Cloth, \$3.00, net.

This work differs from other manuals on bacteriology in that it contains, besides those aspects of the branch which concern the medical sciences in particular, a somewhat condensed review of its applications to various other pursuits. The author believes that bacteriology "should find a place in every general scientific course," and has, therefore, furnished a book suitable for general scientific readers, at the same time devoting most of the space to the pathogenic forms and including all that is of interest to medical students and practitioners. The work in execution is among the best. The introductory chapters, covering 140 pages, are admirably written, unusually interesting, and embody just what the student needs for proper comprehension of the fundamentals of the branch, and to gain a correct idea of its scope. The chapter on "Immunity" is as satisfactory as our present more or less theoretic ideas on the subject permit. Following this the individual organisms are dealt with, a chapter being devoted to each. After a description of the chief peculiarities by which the organism is recognized, full information is given as to the products of its growth and its pathogenicity for both man and the lower animals. Methods of immunization also receive ample consideration. The modes of dissemination and invasion of each bacterium are mentioned, together with measures important in prophylaxis. The book is thoroughly up-to-date; anaphylaxis and the *Treponema pallidum*, e.g., are fully considered. The illustrations are excellent and very practical. Micro-photographs of each organism discussed are given, together with photographs of the more characteristic cultural appearances. The last 100 pages of the book are concerned with the pathogenic protozoa, the bacteriology of milk and milk products (an admirable section), bacteria and the nitrogen cycle, bacteria in the arts (as in tanning, curing of tobacco, preservation of foods, vinegar-making), the bacteria of air, soil, and water, and the bacterial diseases of plants. In the appendix are described the minute supposedly specific pathological appearances seen in certain infections, as small-pox, scarlet fever, the Negri bodies in hydrophobia, etc. On the whole, we heartily recommend this work because of its completeness, great readability, and attractive arrangement. It will not only serve as an admirable introduction to the study of bacteriology, but because of the wealth of material it contains, will be of value as a work of reference and even as a guide in the laboratory.—L. T. DE M. S.

DIABETES MELLITUS (Le Diabète Sucré). By R. Lépine, Professor of Clinical Medicine in the University of Lyons. Octavo, ix + 704 Pages. Paris, 1909: Felix Alcan, Publisher. 16 francs, and postage.

This work is the product of twenty years of clinical study and of laboratory experimentation at the University of Lyons. Its author has attempted to work out the pathogenesis of diabetes by a synthesis of various known factors. Ascertaining certain of these factors through his own researches, he followed the methods of Claude Bernard, and made a careful study of the phenomena of glycemia. He also brought out certain new features concerning glycogenesis and glycolysis. Finally, he made a comparative study of the various forms of glycosuria and succeeded thereby in throwing much light upon certain varieties of diabetes.

In the first half of the book, Prof. Lépine reviews interestingly the results of previous researches on the pathogenesis of diabetes, then discusses in full each phase of the question. Thus are considered, in turn, the normal status of carbohydrate materials in the blood, the digestion and absorption of sugars, the carbohydrate reserves present in the organs of the body and the influences upon which the extent of such storage depends, glycogenesis and glycolysis, etc. Having fully developed all data obtainable from physiological researches, he

then proceeds to the distinctly abnormal conditions of carbohydrate metabolism: hyperglycemia and the various forms of glycosuria. A large amount of personal experimental work is cited in support of the conclusions reached.

The second half of the volume deals with the practical side of diabetes. The etiology, symptoms, nutritional changes, complications, diagnosis, prognosis and treatment receive detailed consideration in successive chapters. The author expresses his belief that, on the whole, when not complicated by grave acetonemia, diabetes is a curable affection, provided both hygienic, medical, and sometimes even empiric measures be associated in its treatment. Prof. Lépine is to be congratulated upon the splendid results his deep and painstaking investigations on diabetes have borne, as well as upon the skill with which, from rather technical subject-matter, he has made of the present volume a work of marked interest and of the greatest practical importance. All who desire a clear understanding of the pathogenesis of diabetes and a definite basis for the logical treatment of each one of its phases and manifestations, should have this book on their shelves.—C. E. DE M. S.

CONSTIPATION AND INTESTINAL OBSTRUCTION. By Samuel G. Gant, M.D., LL.D., Professor of Diseases of the Rectum and Anus in the New York Post-Graduate Medical School and Hospital. Octavo of 559 Pages, with 250 Original Illustrations. Philadelphia and London: W. B. Saunders Company, 1909. Cloth, \$6.00, net; Half-Morocco, \$7.50, net.

This work, written for the benefit of general practitioners as well as specialists, embodies a complete and not too technical discussion of constipation and intestinal obstruction in all their aspects. After giving a description of the anatomy and physiology of the structures concerned, the author discusses at length the etiology, symptoms, diagnosis, and treatment of all forms of fecal retention. Considerably more than one-half of the book is devoted to the treatment, including not only that of constipation itself, but of all its complications and sequelæ. As a result of his experience the author has become a firm believer in the value of physical, dietetic, and educational measures in the curative treatment of constipation, as against the medicinal measures, which, in his own practice, he rarely employs.

EXPERIMENTAL PSYCHOLOGY AND METAPSYCHY SERIES (Bibliothèque de Psychologie expérimentale et de Métapsychie). Issued under the direction of R. Meunier. Nos. 1 to 6. Paris, 1908: Bloud et Cie, 7 Place St. Sulpice.

These little volumes have been written for the benefit of teachers, physicians, students, and those of the cultivated public who desire to be familiar with psychology and the less clearly defined phenomena included under the term "metapsychy." As is stated in the introduction, these data are to-day sufficiently numerous and well-established to warrant their presentation in a form suited to others than laboratory workers and specialists in this line. Each number contains about 100 pages. While a series of small works such as this cannot but lack to some extent the unity of execution and the completeness present in a single larger volume and necessary to a general exposition of the subject, the entertaining style and convenient size of these volumes should win them many readers.

In Volume No. 1, "Telepathic Hallucinations" (Les Hallucinations Télépathiques), N. Vaschide considers the problem of mental telepathy as a whole, discusses the theory of probabilities as applied to the phenomena grouped under this term, describes experiments, some of them personal, and concludes with a review of the results obtained.

No. 2, "Spiritualism in Relation to Insanity" (Le Spiritisme dans ses rapports avec la Folie) is by Dr. M. Viollet, physician to the State Insane Asylum. The author develops in an entertaining way the effects produced by spiritualistic cultivation on minds weakened or already disordered.

No. 3, "Morbid Audition" (L'Audition Morbide), is by Dr. A. Marie, Physician-in-Chief to the Villejuif Asylum. Disturbances of hearing of psychic origin are considered. Deficient hearing is first discussed, then hyperacusis or excessive hearing, together with "colored audition" and auditory hallucinations.

No. 4, "The Prejudices Against the Insane" (Les Préjugés sur la Folie), by Princess Lubomirska. The wrong ideas concerning insanity that still prevail to a large extent in the minds of the less informed public are discussed.

No. 5, "The Abnormalities of Attention" (La Pathologie de l'Attention), is by N. Vaschide and R. Meunier. The authors review the results obtained by various experimenters, and add observations of their own.

No. 6, "The Synesthesias" (Les Synesthésies), by Henry Laures. The volume deals with those curious disturbances of perception in which stimulation of a given organ of special sense results in subjective sensations pertaining not only to that form of sense, but also to another. The commonest of these disorders is "colored audition," in which every sound heard is vividly associated with the sensation of a definite color. The author cites numerous examples of the various synesthesias, and emphasizes the emotional origin of many of them.—L. T. DE M. S.

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No. 1.

Clinical Lectures

TABES DORSALIS.

By JOHN V. SHOEMAKER, M.D., LL.D.,

Professor of Materia Medica, Therapeutics, Clinical Medicine, and Diseases of the Skin,
in the Medico-Chirurgical College and Hospital of Philadelphia.

PHILADELPHIA.

GENTLEMEN: The patient before you is one that has been referred to this clinic by the out-patient department of this hospital.

Family History.—Her parents both died of small-pox when she was a small child and as a consequence thereof she has no knowledge concerning their family history.

Previous Personal History.—As a child she had measles, whooping-cough and small-pox at the age of twelve. She first menstruated at seventeen years of age and had syphilis at the age of twenty, which was contracted from her husband. She had only a half year's treatment during the secondary stage.

Social History.—She is married and has had four children all of whom are dead. She had two abortions. Her habits are good.

Present Illness.—Three years ago she first noticed that her steps were uncertain and within twelve months time her gait became staggering in character, which gradually grew worse. About a year ago she suffered from severe pain in the temples and from dimness of vision. She also had pains in her lower limbs and now complains of a sensation of constriction around the body over the region of the umbilicus.

Physical Signs.—A general examination reveals emaciation of her lower limbs, with soft flabby muscles and an absence of the knee jerks. The abdominal reflexes are also absent. The pupils fail to contract to light, which is known as the Argyll-Robertson pupil. When she stands with her feet close

together and her eyes closed her body sways backward and forward, so much so that she almost falls over. This is known as Romberg's sign. The heart, lungs and abdominal viscera are apparently normal. Her tongue is heavily coated, but she has had no disturbance of her digestion. Her bowels are regular and she voids urine at regular intervals.

Urinalysis.—Albumin, negative; sugar, negative; indican, slight reaction; specific gravity, 1023; color, pale straw; odor, aromatic; casts, absent; erythrocytes, a few; leucocytes, a few; cylindroids, absent; urates, a few.

Diagnosis.—This case is undoubtedly a case of tabes dorsalis. The diagnosis is based on the Argyll-Robertson pupil, Romberg's sign, the absence of the knee jerk, and the abdominal reflexes, the girdle pains, pain in the legs at times and dimness of vision.

Differential Diagnosis.—This disease is sometimes mistaken for cerebellar disease and anterior poliomyelitis. The differential points are clear, and for your convenience we have placed them on the blackboard.

Locomotor Ataxia.

1. No headache or vertigo.
2. Romberg's sign present.
3. Argyll-Robertson pupil present.
4. Knee-jerk absent and other reflexes absent.
5. Gait abrupt and staggering.
6. Pain fulgurant.
7. Patient cannot walk with eyes closed.
8. Gastric disturbance seldom.

Locomotor Ataxia.

1. Romberg's sign present.
2. Argyll-Robertson pupil present.
3. Inco-ordination of movements.
4. Fulgurant pains.
5. No true paralysis.
6. Muscle not atrophied.

Cerebellar Disease.

1. Always headache or vertigo.
2. Romberg's sign absent.
3. Argyll-Robertson pupil absent.
4. Reflexes normal.
5. Gait swaying in character; drunken gait.
6. Pain dull and more constant in character.
7. Patient walks better with his eyes closed.
8. Cerebral vomiting.

Anterior Poliomyelitis.

1. Romberg's sign absent.
2. Argyll-Robertson pupil absent.
3. Co-ordination of movements.
4. Pain not severe.
5. Paralysis.
6. Muscle very much atrophied.

Pathology.—The lesions are principally situated in the spinal cord, while the cerebral and medullary changes usually occur in the nuclei of the columns of Goll and Burdach and in those of some of the cranial nerves. In the spinal cord the lesions are principally in the posterior roots and the degenerative changes of the fibers of Lissauer's columns, of the posterior root zone of Charcot, of the fibers going to the column of Clarke and the comma-tract. In the later stages of the disease the columns of Goll and Burdach, Gowers, and the direct cerebellar tract are involved. The posterior roots become atrophied and gray in color. The meninges become thickened and adherent.

Etiology.—The cause of the disease in this patient is due to syphilis and excessive venery. I believe that syphilis is more often the cause of tabes dorsalis than any other known cause. Among the predisposing causes are exposure to wet and cold, sexual excess, traumatism, alcohol and various toxæmias. The disease is more common among the male than the female and occurs more frequently among the white races.

Treatment.—The treatment, of course, depends upon the cause of disease. However, as a rule, it should be conducted along hygienic, dietetic, electrical and medicinal lines. The proper rest and exercise is all important. Exercise should be systematic to train the muscles in co-ordinated movements, but must never be carried to the point of fatigue. The complexity of the task must very gradually be increased so as to avoid fatigue and irritation. Of course, the exercise, if possible, should be taken in the open air and sunlight. The patient should sleep at least ten hours each night and should lie down to rest after the exercise. Massage is essential to keep up the tone of the muscles. Warm bathing, daily, to stimulate the functions of the skin. The diet should be plain and easily digestible to avoid, if possible, the gastric crisis, which is a sudden severe pain in the stomach, associated with nausea and vomiting of acid material. Electricity, in the form of the frictional or static current, the galvanic or the high-frequency current for its central effect, is a valuable adjuvant in the treatment of this patient and other patients suffering from *tabes dorsalis*. It will stimulate the central nervous system and thus awaken the activity of the dormant nerve cells far better than any other agent. Electricity will stimulate the circulation, promote absorption and elimination.

Medicinally we will place her on the following combination:—

R Sodii iodidi ʒss.
 Syrupi sarsaparillæ compositi, q. s. ad..... fʒiv
 Misce. Signa.: One teaspoonful in a glass of water two hours after
 each meal.

Silver nitrate given in $\frac{1}{8}$ -grain doses and gradually increased to grain $\frac{1}{4}$ three times daily is of great value in very many cases.

Prognosis.—I do not believe that this patient will ever be cured by the aid of drugs, yet I believe that her disease can be arrested and her life prolonged from one to five years.

OPHTHALMIA NEONATORUM.¹

By L. WEBSTER FOX, M.D., LL.D.,

Professor of Ophthalmology, Medico-Chirurgical College and Hospital,
 Philadelphia, Pa.

GENTLEMEN: The subject of to-day's lecture is one which is not only of the greatest importance to the ophthalmologist, but which will concern you greatly as general practitioners and as obstetricians. It will impose upon you the great responsibility of preventing blindness, both by prophylaxis and by treatment. I refer to *ophthalmia neonatorum*, the purulent conjunctivitis of the newborn, a disease which has shut out the light of day from thousands, which has filled our blind asylums, and which has made public

¹ Clinical lecture delivered in the College Amphitheatre, Medico-Chirurgical College, October 15, 1909.

charges of many lives that otherwise would have been filled with industry. Your duty, therefore, is a triple one—to your patient, to the public, and to yourselves. Before you I present a number of children from the Overbrook Asylum for the Blind, silent evidences it is true, yet conveying to you with the eloquence of a Demosthenes what thousands of ophthalmic surgeons are teaching to-day. These disastrous results are in almost all cases preventable by the obstetrician, as I am about to show you, after which none of you should ever be open to the imputation of neglect, or carry through his professional life the stigma of neglected responsibility which comes from many of these sightless eyes.

Definition.—Ophthalmia neonatorum, conjunctivitis neonatorum, or the blennorrhœa neonatorum of the Germans, are the terms applied to the purulent conjunctivitis of the newborn, resulting from an infection in the birth canal of the mother who is generally affected by leucorrhœa or gonorrhœa.

Etiology.—While other organisms may be present, the evidence that the gonococcus predominates in these infections and disappears after its removal is conclusive. The transmissibility of the infection by contact was first discovered by F. Jaeger; that the medium of contagion was a discharge from the mother was subsequently demonstrated by Piringer in 1839; while the exciting cause, the gonococcus, was finally observed by Neisser in 1879. It is good judgment, therefore, to suspect gonorrhœal infection in every case of conjunctivitis in the newborn, and from a standpoint of prophylaxis to consider every ante-partum abnormal vaginal discharge as suspicious.

Symptoms.—You should be on your guard for even an abnormal redness of the lid borders or conjunctivæ of the child. One of the earliest symptoms is a small pearly globule of secretion, not unlike a tear, generally adhering to the inner canthus, which may occur as early as twelve or fifteen hours after birth. If at the end of the first day this globule should become more opaque and increase in viscosity, you will recognize the transitional stage from a catarrhal to a muco-purulent secretion, and if this globule should subsequently assume a yellowish tinge, pus is beginning to form, and the danger signal is before you. To hesitate at this stage may be serious. Within twenty-four to thirty-six hours after such appearances, the symptoms may develop with a rapidity and intensity out of all proportion to the original manifestations. The upper eyelid becomes swollen and œdematous, the eyelashes adhere by reason of the exuding pus drying upon them, the bulbar conjunctiva becomes distended from the underlying exudation (a condition known as chemosis), sometimes almost completely burying the cornea, and what was once a mild and easily controlled case has progressed to a refractory and often a hopeless one. The other eye soon becomes affected. If untreated the discharge may become bloody. The constant pressure of the discharge upon, and its contact with, the cornea soon affects that structure, usually about the tenth day. The cornea now assumes an opaline tint and progresses toward ulceration unless appropriate treatment is instituted; if not, or if it is too late, perforation of the cornea will occur, the iris will prolapse into the

wound, the lens will be injured, and as nature attempts resolution, the contents of the eyeball becomes disorganized and the eyeball shrinks, with the results you see in the case of these blind children before you. This final stage is called *phthisis bulbi*. In other instances the iris heals in the perforation, and becomes attached to the posterior surface of the cornea, producing the condition known as *anterior synechia*.

The corneal opacities following ophthalmia neonatorum vary in size and density. A small hazy opacity is termed a *nebula*; if large and denser, a *macula*; an extensive one, a *leucoma*. If the intra-ocular pressure succeeds in forcing the contents of the eyeball forward, pushing the weakened or perforated cornea before it, a bulging takes place, to which the name, *anterior staphyloma* is applied.

Diagnosis.—While from a bacteriological standpoint the finding of the gonococcus is conclusive of gonorrhœal infection, in these cases prompt and vigorous treatment should not be deferred for the microscopical examination. The profession has been taught this in the case of diphtheria. Were you suspicious of a diphtheritic infection, you would certainly not defer the administration of antitoxin for the results of the culture. Ophthalmia neonatorum is likewise disastrous in its ravages, and its prophylaxis, as I will show you, is even simpler and as harmless as in the case of diphtheria. In the presence of the symptoms I have mentioned to hesitate is to lose.

Prophylaxis.—The prophylaxis of ophthalmia neonatorum begins with the mother. It will be your duty to the unborn child to ascertain with scrupulous care whether or not the mother has had an abnormal vaginal discharge before parturition. If such a discharge has existed, it should be combated by antiseptic vaginal douches, so as to render it as innocuous as possible. As soon as the head of the child is born the eyes should be immediately cleansed with a warm boracic acid solution, and one or two drops of a two-per-cent solution of silver nitrate instilled. This prophylactic measure bears the name of "Credé's Method," after the obstetrician in Leipsic who first called the attention of the profession to its value. If this method were universally employed as it should be, its results would rank as brilliantly as those of antitoxin, or of vaccination. Laws have been enacted in several States, providing for the compulsory notification by nurses, midwives and other attendants to a qualified physician of all cases of inflamed eyes in newborn children or soon thereafter. I am of the opinion, however, that a persistent educational campaign will ultimately be the best method. In some parts of Europe Credé's method is compulsory by law.

Treatment.—The first and most important consideration is to keep the eyes, as far as possible, free from the constantly forming pus. This is accomplished by irrigating the eyes every half hour or hour with a warm boracic acid solution, and by gently removing any adherent pus with a piece of soft moistened lint or absorbent cotton. A weak bichloride of mercury solution, 1 : 8000 to 1 : 5000 is also of great value. The irrigation should be thorough, and should be especially applied to the upper and lower *cul-de-sacs* of the conjunctiva. In the early stages of the disease when there is great swelling

of the lids nothing surpasses the constant application of cold. The only contra-indications to the procedure are involvement of the cornea, and weak or marasmic infants. The method of preparing the cold applications is as follows:—

A bowl of cracked ice is prepared and into this is set a smaller bowl containing a 1 : 2000 bichloride of mercury solution. A number of small dabs of lint or cotton are soaked in this solution, while others may be placed directly upon the ice around the smaller bowl ready for immediate use. They should be applied continuously day and night, and thrown away as soon as used, being subsequently destroyed. * You see before you a number of dabs prepared for application. Once or twice a day according to the severity of the case an application of nitrate of silver, five grains to the ounce, should be made to the everted lids of the child in the manner I am about to show you. This should be done by yourselves, and not entrusted to the nurse. You will now observe the method of handling the child, and of making the applications. The nurse is seated opposite to the physician upon whose lap there is a towel. The head of the child is gently but firmly secured between the knees of the surgeon, the attendant holding the lower portion of the child's body on the lap. By this means an unobstructed view of the eyes is obtained, and both hands of the surgeon are free. The lids should then be freed of any adhering discharge. This should be done with the greatest gentleness, as should all manipulations about the eyes. You should be very careful not to separate forcibly the lids, as you may infect your own eyes from a sudden escape of collected pus. The eversion of the eyelids of infants with the fingers requires considerable practice, but it can also be accomplished by gently everting the lid over a glass rod or match-stick. The silver nitrate solution should be applied by means of a cotton applicator. It should not be *rubbed* along the delicate conjunctiva as is often done, but the structure should be gently *touched* along its entire surface with the solution. Any excess of the silver nitrate can be neutralized by a normal salt solution. A twenty-per-cent. solution of protargol and similar preparations of the organic silver salts are also of value, but I have not found them as efficient in their bactericidal action as silver nitrate; they do not, however, cause as rapid coagulation of albumin in the tissues, therefore penetrate deeper, and act as valuable mechanical cleansing agents in washing away the pus and bacteria from the deeper structures.

The cornea should be inspected at frequent intervals. As soon as this structure becomes hazy, the cold applications should be substituted by hot ones. I have found during the last few years, that if the cornea is simply steamy in appearance, without the formation of ulcers, that very good results can be obtained from eserine, one-half grain to three drams, instilled several times daily. In these cases the following prescription is a favorite of mine:—

R Eserinæ sulphatis gr. ij.
 Quininæ hydrochloridi gr. x.
 Aquæ camphoræ,
 Aquæ destillatæ, of each ℥ij.—M.

If in spite of all this treatment the cornea begins to ulcerate, atropin, one grain to three drams, should be instilled twice or three times daily, in order that the pupil may become dilated and the iris prevented from prolapsing into a possible perforation. Once in twenty-four hours a five-per-cent. solution of trichloroacetic acid should be gently applied directly to the ulcer. I have found the internal administration of gray powder or calomel and the use of mercurial inunctions of decided value as adjuncts in the treatment, especially where there is a tendency to plasticity. If there be marked oedema of the eyelids the following is of value, applied on gauze compresses:—

<i>R</i> Zinci chloridi	gr. iv.
Acidi borici	gr. xij.
Tincturæ belladonnæ,	
Vini opii, of each	f3ij.
Aquæ camphoræ,	
Aquæ destillatæ, of each	f5ij.

As the discharge decreases the nitrate of silver solution can be gradually weakened. Treatment should, however, be continued even after the active symptoms have disappeared, as the gonococci are very tenacious, having been found in the conjunctival sac for days and weeks after the purulent discharge had ceased.

Both eyes are usually affected, but in some instances the infection can be prevented from extending to the other eye by means of a Buller's shield, which consists of a watch crystal, or a piece of transparent celluloid, completely surrounded by adhesive plaster and fastened over the uninvolved eye, but being left free below, that is, not attached by the adhesive plaster, for the purpose of maintaining ventilation.

Prompt and skillful treatment will save the eye in almost all cases, and I trust that this lecture will put you on your guard in all suspicious cases, and equip you to combat the disease and, therefore, prevent the tragical results which you have seen.

Original Articles

TREATMENT OF PNEUMONIA.

By C. S. ASHFIELD, B.S., M.D.,

S. NORWOOD, OHIO.

LET us consider for a moment the function of respiration. In many simple forms of life the respiration is carried on by the skin, which is kept moist; in fishes, through the gills, and in insects through air tubes that ramify through their bodies. In human bodies while the process is more complex the principle remains the same, acquiring oxygen and giving off

carbon dioxide. Energy or oxygen is acquired to be used in the body to be converted into still other forms of energy, by the process of slow combustion or internal respiration. The lungs, two soft elastic bags inclosed in a hard case, the thorax, expand with each respiration, rubbing against the inside of the enclosing case, which is rendered smooth by a fluid lubricating them, have been compared aptly to a bellows, a soft elastic bag in a hard case. The heart, pumping venous blood to the lungs through the pulmonary artery, receiving in return bright arterial blood through the pulmonary vein, will be an important factor in disease of the lungs. Extra work will be thrown on the heart. While the function of respiration is to some extent under control of the will, we can stop breathing for some seconds, hold the breath, increase the inspiration or expiration; however, this is very limited. In a lesion, localized on the arm, leg or even in the stomach, the organ affected can be rested for not an inconsiderable length of time. The lungs cannot be given rest directly.

In the treatment of any disease the nature of the disease must be taken into consideration. Many years before the search for the poisonous, or noxious material or germ was undertaken, it was suspected that this was a constitutional or infectious disease. In pneumonia we have an infectious disease running a course in the majority of cases towards recovery. The pneumococcus of Fraenkel is present in a large number of patients. The period of incubation is supposed to be very short. On the fifth, seventh or ninth day the disease terminates, the fever subsiding by crisis or lysis. Abortive forms of pneumonia lasting for a day or two days have been observed. In 1870, Juergensen said, "Croupous pneumonia is a constitutional disease and is dependent on a local cause. The pulmonary inflammation is merely the chief symptom and the morbid phenomena are not due to the local affection. The hypothesis of a morbid cause is indispensable. Croupous pneumonia belongs to the group of the infectious diseases." "The resolution of the constitutional symptoms and especially the suddenness of their disappearance afford us an additional proof." "The fever first brings to expression the local disturbances produced by the pneumonia." From these quotations an idea of the character of the disease may be obtained.

The symptoms common to a great many patients with this affection: the general symptoms—pain, dyspnoea, cough, expectoration; and the physical signs obtained by auscultation, fine crepitation heard in the early stages, followed by consolidation, noted by vocal fremitus, the sound penetrating better through a solid medium, also dullness on percussion, the coarse mucous râles heard in the later stages, all are useful to denote the progress and state of the disease. However our indications for medicinal treatment are often indicated by symptoms or conditions less pronounced. In the aged the disease has a peculiar course. Any one seeing an old person with pneumonia, for the first time, would not think he was very sick. The organs in the aged are affected more individually, there is a lack of reaction. In the young, on the other hand, the disease is very alarming to a close observer, out of all proportion to its mortality.

Let us look for a moment at the old method of treatment, bleeding and large doses of tartar emetic. Dr. Gregory, of Edinburgh, said that by the lancet alone, and water gruel, if he could see the cases early enough, he could abort many of them. This plan has been abandoned. Specifics for the disease have been used, the administration of digitalis in good round doses, also carbonate of creosote. Up to the present time I do not know that any specific serum has been found. The expectant method, rest in bed with a nourishing diet has been employed. Some give strychnia from the beginning in anticipation of the sinking at the crisis. Some reserve strychnia to be used at the crisis.

Rest in bed is a measure of the greatest importance. It was found in hospital practice that in those patients who earliest assumed the recumbent posture the disease was less complicated and the recovery less prolonged. As we cannot very well rest the lungs physiologically, all the other organs of the body must be rested, the amount of work thrown on the lungs is thus diminished. Fresh air, oxygen, is of vital importance. When we give plenty of oxygen to the part of the lung not diseased, the excessive pathological action in the diseased part is diminished.

The room should be kept warm but well ventilated without draughts.

Expectorants—ammonium carbonate, ammonium chloride—often upset the stomach which should be kept at its best; and it has often been observed that when a drug, in the average dose, has been given for a single symptom as cough or pain, additional symptoms were noticed, that proved troublesome and often distressing to the patient.

The treatment by small doses of drugs given at the right time and when indicated seems to me to be the best. The drugs used successfully have been aconite, veratrum viride, bryonia, phosphorus, digitalis, nux vomica, sulphur, mercury and arsenic. Each has its special indications. Many patients can be treated successfully with but two or three of these. All the signs and symptoms presented by the patient should be taken into consideration. Any preconceived idea as to the efficacy of some single drug alone cannot be relied upon. Indications for medicines are presented by the individual patient. The disease moves quickly, as a rule, through its various stages. In the first stage, hot, dry skin, restlessness, anxiety, especially in plethoric subjects, aconite may be indicated in small doses, depending upon the judgment of the physician, always using it within safe limits. After the first stage of congestion it will hardly be of any more use. It is a quick acting remedy keeping pace with and mitigating the early symptoms. The dose may be repeated according to the severity and acuteness of the symptoms. If then the following symptoms should present themselves, cough with rusty sputum, pain in the chest (lancinating), sticking (pleural), sore rheumatic-like pains in the shoulder-joint or muscles of the chest—worse on motion, foul tongue, thirst, and constipation with headache, give bryonia, it is indicated. The dose is regulated by the severity of the signs and symptoms presented by the patient. This is a good remedy and when indicated, results are obtained. Gentle

rubbing of the affected side is useful. The application of heat by the hot water bottle has been found useful. If the fever should prove troublesome sponging the head, neck and arms with cold water is efficacious. At the crisis stimulants in the form of strychnia may have to be resorted to or alcohol when it is indicated. If, however, the patient has been given the proper medicinal treatment the crisis will not be so marked. If when the acute symptoms have subsided there is an asthmatic shortness of breath, slight pleurisy and a tendency to chronicity, sulphur in small doses is indicated. Many of the above mentioned remedies may be indicated, the proper use of them can only be acquired by a diligent study of materia medica. To sum up the treatment: (1) Rest in bed, early; (2) plenty of oxygen, fresh air; (3) treat the individual patient; (4) proper medication in small doses at the right time.

Examples of Cases.

CASE 1.—Pneumonia in an old lady about 60, was benefited by the administration of ammonium chloride, about 4 grains in a watery solution every 3 hours. This patient sat up in bed most of the time. Neither temperature nor pulse ran high. The disease pursued a latent course. Cough was not marked until the stage of resolution, when large quantities of rusty sputum were brought up. Recovery.

CASE 2.—Patient, age 28, weight about 128 pounds, was taken down suddenly in the afternoon. He was of dark complexion. There was a history of chronic lung trouble extending over a considerable period. Patient was lying on the affected side, temperature $99\frac{1}{2}^{\circ}$, pulse 100 strong and full. He complained of pain between the shoulders, also pain in the chest.

Second day. Temperature 101° , pulse 99. Tongue coated; bowels inactive; large quantities of mucus mixed with blood were expectorated.

Third day. Temperature 101° . Same symptoms, but less severe.

Fourth day. Temperature $101\frac{1}{2}^{\circ}$, pulse 80, morning; afternoon, temperature 101° , pulse 80. Resolution. Appetite good.

Fifth day. Temperature 101° , pulse normal. Cough was not so frequent.

Sixth and seventh days. Temperature and pulse about normal.

In this patient bryonia was used and the symptoms for which it was given were mitigated. However, arsenic given first on the fourth day in small doses, hastened resolution and lessened the severity of the whole course of the disease. Among the symptoms which led to its use were dull, waxy pallor, history of chronic lung affection and prostrated appearance of the patient. The patient recovered and his condition was better than previous to the attack of pneumonia.

ON THE DIFFERENTIAL DIAGNOSIS OF RETENTION OF URINE AND ANURIA AND THEIR RELATION AND SIGNIFICANCE TO GENERAL MEDICINE.¹

By WILHELM KARO, M.D.,

BERLIN, GERMANY.

If I address you, gentlemen, on a subject of my special field of work, of urology, I am aware of the fact, that I am speaking before a society of all kinds of practitioners and specialists, and, therefore, it cannot be my purpose of diverting your attention from general medicine, but rather to show you that all our specialties are only a part of the general system. The technique of diagnosis and of therapy, these are the fields to which the specialist is really confined; but the clinical and pathological picture of any affection must be familiar to every physician.

To illustrate more fully what I have stated, I would like to call your attention to the great group of symptoms, which are characterized by the inability of the patient to pass water.

We have here several totally different conditions to deal with, which not only the layman does not recognize, but also the practitioner sometimes fails to diagnose. That is, they do not differentiate between a non-functionating kidney, that is between cases of anuria and between a retention of urine due to a mechanical obstruction of the lower urinary passages.

In some cases the question, whether we have to deal with a retention or an anuria, cannot be so easily decided. The following case for instance will illustrate this. I was called to a young mother, whose baby, three days of age, had not passed any urine at all. What was the cause of this anuria? Neither the mother nor the physician could give any information; the child seemed to be in perfect health. On examination I found the prepuce closely adherent to the gland and obstructing the external meatus. I made a small incision, thus exposing the meatus and the condition was at once relieved. You can see that this was not a case of anuria in the proper sense, but only a retention of urine due to a mechanical obstruction. However simple as the case was, it may occur not only to laymen, but also to a practitioner, that he fails to find the true cause of such a condition.

Now in adults the same difficulty may occur. Here also we may not be able to differentiate at once between a retention and an anuria. Our first task will always be to pass a catheter into the bladder, if even by a repeated catheterization no urine whatever can be obtained, then we have to deal with a case of anuria. Cases have been observed, in which such a complete anuria continued for more than twelve days and you will at once understand, how important a thorough knowledge of this condition is. Such an anuria may be due to a mechanical obstruction of the upper urinary passages of the ureters or

¹Read before the Anglo-American Medical Association of Berlin, October 16, 1909.

of the renal pelvis due for instance to calculi or to a kink of the ureters. In contradistinction to these conditions, which we call false anuria, there are cases of real renal anuria; these are cases in which the kidneys have ceased to excrete any urine.

As an illustration of this condition I will state the following case: I was consulted by a man 25 years of age, who had not passed any urine for five days. The man appeared to be very sick, his face was swollen, his pulse rapid and small, the tongue dry and his skin doughy. The catheter, being introduced, did not meet with any obstruction, but I could obtain only a few drops of urine; this urine contained blood and numerous casts. That was a case of severe acute nephritis with a subsequent true anuria. The patient's life was saved by decapsulation of both kidneys, that is to say, by the Edebohl's operation, a few hours after the operation both kidneys took up again their function and the patient recovered.

As you have seen, any kind of inflammatory or degenerative affection of the kidneys may give rise to anuria. We would not be surprised to find anuria in consequence of diphtheria, scarlatina and other infectious diseases frequently affecting the kidneys. It has, furthermore, been observed in eclampsia and after intoxication with corrosive sublimate or other poisons.

Far more interesting are those cases, in which one kidney is quite normal and still a complete anuria is present. In hydronephrosis or tuberculosis of one side, both kidneys may cease to excrete any urine.

Finally, there is a third group of cases of anuria in which both kidneys may be healthy. The most various peripheral irritations may by way of reflexes inhibit the function of both kidneys, being otherwise normal.

We can very easily understand this, if we consider that the excretion of urine is under the control of the vasomotor-innervation of the renal vessels. Any irritation from the bladder, the prostate or any other peripheral organ can by nervous influences be transmitted to the kidneys, thereby causing a constriction of the blood-vessels.

The following case will illustrate the fact that we are justified to speak of a hysterical anuria. A very nervous lady came to me complaining of not having passed her water for six days. She did not make the impression of being very sick, nor did she suffer from any pain. On catheterization the bladder was found to be empty. Not a drop of urine could be obtained. I treated the patient by catheterizing both ureters; a few minutes after introducing the catheters into the ureters both kidneys took up again their function. As both kidneys were perfectly normal, I had, of course, to deal with a case of real hysterical anuria. Why the simple interference of catheterizing the ureters brought about a urinary secretion is hard to explain. We must assume that the catheterization is a stimulus, reflectorily provoking the renal function.

Although the number of my own observations has so far been limited, still these cases will suffice to convince you, that anuria is a symptom worthy of being considered a serious affair by every physician. You are very liable to overlook this condition. We must bear in mind that cases of anuria of

from 10 to 20 days have been observed without offering the slightest uneasiness. But even if you have succeeded in finding anuria, you will meet with great difficulties in determining, to what it is due. For this purpose it will above all be necessary to thoroughly investigate the etiology and history of the patient. In this matter, gentlemen, it is of no value to be a specialist; here it is indispensable to be a physician, who takes into account the whole organism of the patient.

The indications for our therapeutical interference depend in each individual case upon their cause. In every case we must at once try to provoke the excretion of urine. My last case has shown to you that it is comparatively easy. In the majority of cases the catheterization of the ureters is the most simple and convenient way of restoring the renal function. This simple procedure will very often allow us to alleviate and to improve a condition without subjecting the patient to a severe operation. If the catheterization of the ureters was unsuccessful, the decapsulation of both kidneys, according to the procedure recommended by Edebohls, or nephrotomy will be the last refuge.

Remember now, gentlemen, that anuria is only one of the many symptoms which are not only the object of specialty, but which require a broad medical knowledge. Consider for instance the various cases of hæmaturia or pyuria, or the great variety of other affections of the genito-urinary organs, being in intimate relationship to the other parts of the organism. From this point of view I hope that this short paper has been of equal interest to all of you. For the internal practitioner as well as the neurologist, the pediatricist as well as any other specialist, may some day have to deal with such a case, and it will be a grateful task for you to relieve by a simple procedure a patient, who otherwise would certainly have to succumb to the dreadful symptoms of uræmic intoxication.

THE TREATMENT OF SYPHILIS.

By H. M. CHRISTIAN, M.D.,

Clinical Professor Genito-urinary Diseases, Medico-Chirurgical College
of Philadelphia.

In the first place, the writer desires to enter an earnest protest against the spirit of pessimism so prevalent among the profession concerning the curability of syphilis; a spirit which is voiced in the diction of the physician of old that once a man contracted syphilis he always had syphilis, and when he died his ghost would have syphilis. The writer some time ago made the statement¹ that syphilis, occurring among the upper and middle classes of our people, in individuals endowed with good health and of fairly good habits, if seen early in the secondary stage of the disease and promptly and properly treated, is, in the great majority of cases, a perfectly curable disease. This is

¹ *Therapeutic Gazette*, June, 1904.

a proposition generally accepted as true at the present day by those having the widest experience in the treatment of the disease. Equally well recognized is the fact that syphilis occurring among the half-starved and half-washed members of the community, and in habitual drunkards, cannot be cured. The same may be said for cases having once developed tertiary lesions. Treatment can cause their disappearance, but cannot now cure the disease. Further experience in the treatment of syphilis since writing the above has not caused me to change my views in any respect.

I do not want to be understood as belittling the serious character of the affection and the possible grave dangers that may arise, both to the patient and the public therefrom, but I do feel that with the methods of treatment at our command to-day, there can be no necessity for the attitude of abject terror assumed by so many of our patients pronounced to have syphilis.

At the outset of treatment the patient's weight is taken and a record made of it; particular attention should be paid in getting the teeth and mouth in good condition. An examination of the urine should also be made. And right here it might be pertinent to remark that it is an imperative rule and one essential to the achievement of success in the treatment of this disease to have continually in mind the fact that the patient must be treated as well as the disease.

Concerning the personal habits of the patient, I interfere with these as little as possible. Chewing tobacco must be absolutely discontinued, but moderate smoking and temperate drinking I have rarely found necessary to interdict. It has always seemed to me that, as a rule, the patient is pretty well handicapped by the mental depression attendant upon the knowledge that he has the disease, in addition there is the loss of weight with accompanying leucocytosis found early in the disease to a more or less extent in most cases. Under these circumstances I have always felt that to peremptorily upset the patient's equilibrium and to cut him off entirely from the habits of half a life time might interfere very materially with the efficiency of the early treatment.

The time at which to begin constitutional treatment for syphilis is a question which has provoked in the past considerable difference of opinion, but I think that up to the present time at least most syphilographers agree that the wisest course to follow is to wait for cutaneous manifestations before beginning constitutional treatment.

I think that it is perfectly fair to say that the consensus of opinion among men eminent in this line of work is that the early administration of mercury is useless as far as aborting the disease, and may prove somewhat harmful, inasmuch as it disturbs the regular evolution of the disease. Herein lies the chief objection to this line of treatment taken in conjunction with the well-known possibility for error in diagnosis on the part of the physician. Any one coming in touch with a large number of ulcers will readily appreciate the statement that it is not always easy to make a diagnosis in every case. The impression made upon the patient by premature treatment is that he has syphilis. The failure of the rash to appear by reason of an original faulty

diagnosis does not in any way mitigate the mental distress produced by a premature and unfounded diagnosis of syphilis.

The recent discovery of the *Spirochæta pallida* and the growing disposition of the profession to accept the spirillum as the etiological factor in the causation of syphilis, will undoubtedly bring about a marked change in this method of treatment.

Personally, while in the past a warm and consistent advocate of what Jonathan Hutchinson is pleased to term "an antiquated and most mischievous rule," the writer to-day would be disposed to put a patient upon treatment at once where the spirochætæ were found upon any given lesion, but he would require pretty convincing evidence that they *were* present. In this connection Harris says:² "After demonstrating the organism in a primary lesion it is not only unnecessary but harmful to wait for secondary manifestations. The most logical therapy is excision of the chancre when possible, and in all cases the immediate institution of the vigorous antisiphilitic treatment."

I do not feel that all syphilographers are willing at present to endorse such a statement unqualifiedly, but certainly the tendency seems that way.

In taking up the discussion of what may be termed the regular systematic treatment of secondary syphilis at the present day it will be found to fall under one of three forms:—

1. The administration of some form of mercury internally.
2. Treatment by inunctions of mercury.
3. Mercury administered hypodermatically.

First as regards the treatment by the internal administration of mercury. Here the writer feels that, in private practice at least, he can employ this line of treatment with most satisfactory results in a great majority of cases. The compounds of mercury that have from time immemorial been used in the internal treatment of syphilis are the protiodid, the biniodid, the bichlorid and mercury with chalk.

I prefer of all these preparations as a routine remedy the protiodid in one-third grain doses, finding in many cases benign in character from three to four pills are all that is necessary to control the disease.

It is a most important factor in the early stages of treatment that the patient should be seen and thoroughly examined by his physician at frequent intervals at least once in a week or ten days. Whatever lasting impression is to be made by the treatment upon the disease is to be made at this time, and the patient's best interests demand that he should be kept under strict medical surveillance.

A line of treatment such as just described or something very much like it should be kept up with but slight intermissions for a period of eighteen months, during which time the patient's weight and general condition of health are to be taken from time to time as the best indications as to his progress toward ultimate recovery.

Always having in mind that the patient is a human being as well as a

² Journal of the American Medical Association.

syphilitic it may be well from time to time to suspend specific treatment for a short period and either give the stomach a rest from all medication whatsoever or, what is perhaps better, administer for a short time a course of general tonic and supportive treatment. The bichlorid of mercury and the biniodid I hardly consider as having any special value over the protiodid, and in the routine treatment of secondary syphilis by internal medication they hardly take rank with it. Mercury and chalk, the favorite combination of Jonathan Hutchinson, is a very useful preparation to employ temporarily in cases in which the protiodid causes some diarrhoea; but it has always seemed to me too attenuated a remedy to be of any real service during the active stage of the disease. Another preparation of mercury recently placed before the profession is mercuriol, which I have found very useful to alternate with the protiodid; administered in one-grain doses three or four times daily it will be found very valuable in cases where the ordinary preparations of mercury cannot be assimilated.

Syphilis will be found to be like all infectious diseases, the particular type which the disease assumes being dependent both upon the dose of the poison received and the fertility of the soil on which it is deposited. I think there is little doubt but the majority of the cases of secondary syphilis seen to-day, at least among the better classes, are of the benign type. Here the macular rash appears at the proper time and is fairly well distributed over the trunk and limbs, rarely on the face. Accompanying the rash there is general adenopathy, with more or less sore throat and some few mucous patches perhaps in the mouth, with little, if any, alopecia. In this type of syphilis it will generally be found that the internal administration of mercury protiodid, one-third of a grain, three times daily, will probably be all that is necessary to bring about a prompt disappearance of the eruption. If, however, this should prove rather slow in fading away a fourth pill can be given at bedtime. As a rule this is all that is indicated. In these cases the type of the disease, comparatively speaking, is so mild that there is constant danger that the patient, unless warned to the contrary, may break away from all treatment, considering himself as entirely cured, thereby laying the foundation for the development of tertiary lesions at a subsequent time.

The inunction method has appealed for many years to the writer as the most efficient method of attacking the disease in its incipency. At the outset of every case of syphilis, if it is at all practicable and can be done without attracting attention, I advise a course of twenty inunctions, employing a dram of the official ung. hydrarg. rubbed well into the different parts of the body once a day, the treatment lasting from at least ten to fifteen minutes.

The one great advantage that the Hot Springs offer is that we do not have to rely for the efficient manner in which the inunction is performed solely upon the energy of the patients themselves, but there are at hand trained masseurs, skilled especially in this form of medication.

As a rule all patients taking the inunction treatment should take a Turkish bath at least once a week. At the end of three weeks' inunction treatment the patient can be placed upon a form of internal treatment such

as just described. I believe a course of inunctions of great value at least two to three times during the first year, in every case of secondary syphilis where it can be properly and conveniently carried out. In cases where the internal administration of mercury causes serious gastro-intestinal disturbance, and where there is marked anæmia with loss of flesh, and profuse eruption threatening to appear on the face, with marked alopecia, there should be no temporizing with simple internal medication. The patient's domestic concerns and personal comfort can have no concern under these circumstances. Under these conditions the patient must be put upon a well-outlined course of inunction treatment at once. I have generally found that even in the severest type of cases the cutaneous manifestations almost disappear, save for the pigmentation, after about thirty inunctions. It is then comparatively easy to keep up the continuous effect of the inunctions by the internal administration of some form of mercury.

The writer believes that the interests of the patient are best safeguarded by a course of three weeks' inunctions in the spring and fall for four or five years, independent of the fact of the existence of any specific lesions.

Hypodermic treatment.—There seems of late years a tendency in certain quarters to infuse interest in this form of treatment for secondary syphilis. I am perfectly free to say that up to the present time it has not very strongly appealed to me. The main arguments employed for this form of treatment are the exact dosage of the remedy which the patient receives, the rapid effect of the drug and the absolute control of the patient attained by their use. These reasons sound plausible but, to my mind, are offset by the added possible danger of acute salivation, by the fact that the operation should demand all the care required of a surgical operation, in spite of which care there is danger of infection, cellulitis with abscess and, in addition to everything else, requires too much of the patient's time.

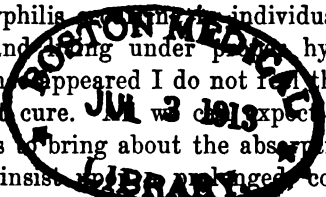
A few years ago I had one side of the syphilitic ward at the Philadelphia General Hospital treated by hypodermatic injections, and the other half by inunctions and internal medication. If there was any advantage one side over the other, it was decidedly in favor of those upon the latter form of treatment. Various forms of mercury for hypodermic medication are now being put upon the market by enterprising manufacturers. They are all very painful when employed and there is, as mentioned before, a possible risk of local infection.

The writer would like to have an open mind upon this subject of the hypodermic treatment of syphilis, but up to the present date has failed to be convinced of its utility in routine practice. Certain graver cases demanding a prompt and powerful action of mercury, as in certain forms of nervous syphilis, might justify this line of treatment, but even under these circumstances I would rather rely upon inunctions of mercury efficiently applied.

The story of the treatment of tertiary syphilis is the same as that of the secondary form of the disease, save that in addition to mercury some form or preparation of iodine is added to the treatment. This change in

treatment should in my opinion take place at about the expiration of eighteen months and kept up pretty steadily for one year. The popular form of iodine employed is, of course, the iodide of potash, which drug in combination with the bichloride of mercury constitutes the popular treatment for all sorts and kinds of syphilitics in every stage of the disease.

The usual course of treatment pursued consists at the end of eighteen months in placing the patient upon a line of mixed treatment usually employed in the tertiary stage of the disease. If there are no tertiary lesions present in the case, the mildest form of mixed treatment is all that is necessary. This may be one-twelfth of a grain of mercury bichloride or one-twentieth of a grain of mercury biniodide combined with two to five grains of potassium iodide administered three times daily. This treatment should be kept up steadily for the space of one year. In those cases where potassium iodide deranges the digestion it can be given alone in milk, or the syrup of hydriodic acid in combination with mercury bichloride can be used. After a year of mixed treatment similar to this, a course of intermittent treatment should be instituted for about six months, at the end of which time, should no lesions appear, all treatment can be safely discontinued.

I want to reiterate my belief that a course of treatment such as just described, if faithfully carried out, will bring about a cure in seventy-five per cent. of cases of syphilis in individuals possessing good general health, good habits, and living under proper hygienic conditions. When tertiary lesions have once appeared I do not feel that we are ever justified in promising a permanent cure.  We can expect to do under such circumstances by treatment is to bring about the absorption of the lesions. At the same time we should insist upon a prolonged, continuous course of treatment with the view of preventing any subsequent return.

In cases of ulcerating tubercular syphilodermata and gummata the best results can be obtained by employing potassium iodide in from ten- to twenty-grain doses three times daily, together with the use of mercurial inunctions twice daily. Personally, I am thoroughly convinced of the fact that mercury is equally as valuable a remedy in tertiary as in secondary syphilis, and that its use in connection with moderate doses of potassium iodide will be found to prove much more effective than the sole employment of enormous doses of potassium iodide.

What the laboratory will offer us in the future in the treatment of syphilis I cannot of course say, but one thing I can say and that is that he who undertakes to supplant mercury as premier in the treatment of syphilis will need more than a laboratory and a collection of anthropoid apes, but will need in addition the art and experience of the specially trained clinician.

As regards the use of the arsenical preparation known as atoxyl in the treatment of secondary syphilis, so much confusion exists in the minds of those supposed to know as to just what it will or will not do, that I think clinicians called upon to treat syphilis in the human subject would be justified in assuming what Ravogli styles a luke-warm attitude toward its employment.

FRACTURES OF THE PATELLA AND THEIR MODERN OPERATIVE TREATMENT.

By AIME PAUL HEINECK, M.D.,

Professor of Surgery, Reliance Medical College; Adjunct Professor of Surgery, Illinois University; Surgeon to the Cook County Hospital.

CHICAGO, ILL.

(Continued from December issue.)

UNDER what conditions is the open operative treatment of doubtful propriety or not indicated?

In formulating indications and contra-indications for the open operative treatment of fractures of the patella, we give only slight consideration to age, sex, and occupation. Individuals of either sex, at all periods of life, and in all walks of society, need a good patella. However, in this, as in all other operations, the state of the tissues and of the viscera must not be ignored. Such anatomical and physiological deterioration of the tissues may be present as to compel us to regretfully substitute inferior therapeutic measures to operations of election. The facts can be stated to the patient and he can select between functional integrity and functional disability. Thiem,³⁴ gives only two conditions as contra-indicating operations:—

1. Absence of separation of the fragments (no diastasis).
2. No loss of extension.

We do not advise the open operation:—

- 1a. In fractures of the patella that occur in a diabetic patient. The tissues of diabetics offer very little resistance to infection. They are tissues of impaired regenerative power. Nevertheless, an absolutely bad prognosis need not be given in these cases.
- 1b. In fractures of the patella occurring in patients having advanced tubercular disease.
- 1c. In fractures of the patella occurring in patients suffering from well developed cardiac, renal, or hepatic disease or suffering from malignant disease.
2. In closed longitudinal fractures, with no displacement, or with but slight lateral displacement.

In fractures of this type, recovery almost invariably follows the combined use of such measures as massage, immobilization, full extension of the leg on thigh, coaptation of the fragments by retentive apparatus. "Osseous union is constantly obtained in longitudinal fractures of the patella." Macewen.³⁵ This statement of Macewen admits of very few exceptions. Meyer³⁶ used non-operative treatment in all his cases of longitudinal patellar fracture (the diagnosis in each case had been verified by X-rays). He obtained excellent functional recoveries in all of them.

3. Do not operate in subaponeurotic or in incomplete fractures. Riechel calls these fractures "subligamentous." Koenig alludes to these cases when he states that in a certain number of fractures of the patella, the bone can be fractured and the overlying aponeurosis remain intact. Owing to the absence of detectable separation, of detectable displacement of the fragments, as well as of other typical symptoms, these fractures often escape recognition, often are diagnosed contusions, etc. The X-rays reveal the line of fracture easily and distinctly. It is important that these cases be accurately diagnosed. By non-diagnosis and consequent injudicious treatment, these cases that call for non-operative treatment can easily be converted into cases calling for an arthrotomy. Wegner³⁷ reports three cases of knee-injuries associated with disability of some duration. Previous to the taking of skiagrams, the exact nature of the condition had not been recognized. The X-ray showed that the patients were suffering from subaponeurotic transverse fractures of the patella in which the inter-fragmentary diastasis could not, or had not, been detected clinically. These X-ray pictures also proved that tear fractures can occur without very evident diastasis of the fragments.

4. Fractures of the patella in which the separation of the patellar fragments is so slight as to be barely detectable do not call for the open operative treatment. The same applies to fractures in which the injuries to the accessory patellar ligaments are unimportant.

5. Do not operate on patients who prefer to pass their lives partly disabled rather than to run the minimal dangers of an operation.

The popularity of the open methods is increasing. In careful and skillful hands, the dangers formerly incident to their employment can now be said to be non-existent. Kocher himself has become an earnest advocate of the open operative treatment. In Von Bergmann's Clinic, it is regarded, since 1893, as the routine treatment for transverse fractures of the patella.

With increasing familiarity with the successive steps of the operation and a better appreciation of a judiciously carried out after-treatment, the results attending its employment are becoming more and more satisfactory.

It is our belief that, after ample preparation of the patient and of the operative field, the open operative treatment is positively indicated:—

1. In all fresh fractures of the patella in the absence of contra-indications:—

a. If the surroundings are favorable:—

1. An aseptic operating room.
2. Skilled surgeon, and assistants having "an aseptic conscience."
3. Dependable suture material, rubber gloves, etc.

b. If the patient is in the best possible condition.

c. If the fracture be of such a nature that a disabling defect is to be expected, if one resorts to non-operative treatment.

d. When the bony fragments cannot be returned exactly by manipulation to their normal position and retained therein by retentive apparatus.

2. In all compound fractures.
3. In all comminuted fractures.
4. In all cases associated with considerable intra-articular effusion. The separation and tilting of the fragments is partly produced and partly maintained by the intra-articular effusion, be the latter hæmorrhagic or inflammatory in nature.
5. In all cases associated with marked laceration of the periarticular tissues (aileron, reserve extensor apparatus).
6. In all cases in which the inter-fragmentary space or diastasis has not at any time exceeded 3 centimeters. This extent of separation cannot occur without laceration of the accessory patellar ligaments, without rupture of the overlying fibroperiosteal tissues. Chaput,³⁸ as a result of experiments on dissecting-room subjects came to the conclusion that the interposition between the fragments of the prepatellar fibroperiosteal tissue does not occur if the fragmentary diastasis fails to reach 3 centimeters.
7. In such fractures as are very liable to cause serious functional joint impairment; among such may be cited, cases in which bony fragments have escaped into the articular cavity, as in McWilliams' case,¹⁹⁰ in which three loose pieces of bone were removed from the joint; operation, good result. Patient walked out on the twenty-eighth day.
8. In all fractures of the patella occurring in individuals upon whom at one time or other a leg or thigh amputation has been performed. To such individuals, complete integrity of function in the remaining limb is of the highest importance.
9. In all fractures of the patella occurring in individuals having some permanent functional impairment of the opposite knee, for instance, in one of Mayer's cases.⁴ In early life, this patient's left knee had been resected. At the age of 35, she fractured her right patella. It was circumferentially looped by the open method. The coaptation was perfect. Result "very satisfactory."
10. In all individuals who, having sustained a partial amputation of the leg, can, for flexion and extension of an artificial limb, derive benefit from the preservation of the integrity of the extensor apparatus of the leg. In Charters' case,⁴⁵ the lower third of the leg had been removed. Two months later, while walking on crutches, patient fell and fractured the patella of the same limb. It was wired. Complete restoration of the knee-joint movements resulted.
11. In all bilateral fractures of the patella, be they of simultaneous or of successive occurrence. In bilateral patellar fractures, it is reasonable to assume some risk in an attempt to transform an almost certainly dependent individual into a self-supporting one.
12. In all refractures in the absence of contra-indications.
13. In old fractures of the patella, associated with marked impairment of function, if the functional loss be dependent wholly or partly upon one or more of the following factors:—

1. Long fibrous union.

2. Union in a faulty position, in a position that mechanically interferes with the proper function of the joint.
3. Absolute non-union.
4. Ankylosis of the upper patellar fragment to the femur.
5. Extensive non-repaired lacerations of the aponeurotic capsular and other fibrous tissues. These lacerations hinder restoration of function, increase the fragmentary diastasis.
The patella is only a part of the extensor apparatus of the leg; an important part, we admit, but not the sole part.
6. In all cases in which non-operative treatment has been followed by unsatisfactory results. In operating on old fractures of the patella it is imperative, previous to the apposition of the fragments, that the fractured surfaces either be freshened or that a thin slice of bone be sawed off from each of the surfaces.

As a general rule admitting of many exceptions, it will also be noticed that the older the fracture, the greater will be the degree of secondary contraction and of atrophy undergone by the quadriceps extensor muscle. The more marked this muscular atrophy and the greater the inter-fragmentary diastasis, the more disabling will be the functional impairment.

In old, as well as in all other fractures of the patella, we must, in addition to repairing the tears in the soft tissues, endeavor to obtain osseous union of the fractured bone. This desideratum can be effected only by securing an exact, an accurate apposition of the freshened fractured surfaces. Consequent to the fracture and to the disability which it entails, there develops a retraction and an atrophy of the quadriceps extensor femoris. This muscular contraction, this muscular atrophy, is the most important cause of the great difficulty, a difficulty at times almost insurmountable, which we encounter in our endeavors to approximate, to appose, to reunite the bony fragments. As easy as is the primary suture of a fractured patella, just as difficult can be the suture of an old fracture of the patella. It is convenient, from the operative standpoint, to classify old fractures of the patella into:—

A. Those in which the fragments can be approximated with but little difficulty.

B. Those in which, owing to the coexisting atrophy and unusual retraction of the quadriceps-extensor femoris muscle, the approximation or rather the exact apposition of the fragments is a difficult feat to accomplish.

In cases in which the fragments can be approximated with but little difficulty, the operation will differ from that performed in recent fractures only by requiring two additional steps.

1. The resection of the inter-fragmentary fibrous callus.
2. The freshening of the fractured surfaces.

It is essential that the inter-fragmentary gap be overcome. Z-shaped incisions for lengthening of the quadriceps may have to be performed. To approximate the fractured surfaces, preoperative massage, position, and traction at times suffice. If these measures fail to secure the relaxation, the

lengthening of the quadriceps necessary to obliterate the inter-fragmentary gap, a plastic operation is indicated.

Which is the most universally applicable of the three main types of operation that are now in vogue for the treatment of fractured patellæ?

The results obtained by the employment of any of these three dissimilar operations, osseous suture, cerclage, suture des ailerons, have been, when the operation was performed by competent hands, so gratifying, that it is embarrassing to suggest that one of them be abandoned. With each of these different methods, excellent functional and anatomical recoveries have been obtained. Osseous suture has given satisfactory results. Cerclage has secured excellent recoveries. As to the third method, it has been truthfully said: "In fractured patellæ absolutely perfect results from the standpoint of contour, solidity, and function have been obtained, in a relatively short period, in cases in which all suturing was limited to the prepatellar and parapatellar fibrous tissues (Peyrot)." Whichever method be employed, the repair of the soft parts is all important. The importance of this step is emphasized by most of the advocates of osseous suturing.

In recent fractures of the patella, I have abandoned osseous suturing. I have not yet seen a case of old fracture of this same bone in which I felt that a good result could not be obtained without the employment of osseous suturing.

To my mind osseous suturing, as a method of treatment for fractures of this bone, has the following shortcomings:—

- a. It calls for special instruments.
- b. The perforating instrument may break, and the broken portion remain embedded in the patella. Annequin⁴⁶ reports a case of this nature. The drill broke and a fragment of it was left in the patella.
- c. It is a procedure not universally applicable:
 1. It is unsuited to the treatment of comminuted fractures.
 2. It cannot be used to advantage in cases in which there is great inequality in the size of the fragments; one very large and one very small fragment. The lower or upper fragment may be that small that it could only afford an insufficient hold to the sutures. In case of this description, many of the advocates of osseous suture resort to Quénu's "hemicerclage" operation. In this operation, hemicerclage, the larger fragment is perforated transversely and the binding ligature is passed through this perforation and either through the ligamentum patellæ or through the quadriceps extensor femoris, through the latter if the lower patellar fragment be perforated; through the former, if the upper patellar fragment be the one perforated. Longitudinal suturing of the fragments may be owing to the unequal volume of the fragments or to their multiplicity, a very difficult operation.
- d. In cases of abnormally friable fractured patella, attempts to perforate the fragments may provoke further splintering of the same.³⁹ The slow elimination of splintered fragments prolongs convalescence, retards recovery.

e. The proper boring in the patella, from before backwards, of channels for the introduction of the sutures, demands experience. At times, it is difficult of execution. The perforation of the bony fragments always complicates and always lengthens the operative procedure.

f. In cases of secondary operation, the fragments may have become so atrophic that they are incapable of holding the sutures. The latter are liable to cut out, the moment any strain is put upon them; as in Tenderich's case,⁴⁷ in which the fragments were so soft that a medium pull upon the silver wire cut into them.

g. It is needless. It adds injury to injury. Equally good if not better results are obtained by less difficult and less laborious methods.

Open circumferential looping was introduced by Berger,⁴⁰ of Paris. It is employed by the advocates of osseous suture of fractured patella, in cases:—

1. In which one of the fragments is too small to admit of perforation previous to the introduction of the silver wire, steel wire, or other employed suture material.

2. In which one of the fragments is too small to be directly sutured to the larger fragment.

3. In fractures with many fragments or with comminution.

4. In cases of abnormal friability of the patella.

It has been and is still extensively employed in the treatment of fractured patellæ, (a) as a supplementary measure to osseous suture; (b) as a preliminary, or as a supplementary measure to suture of the prepatellar and parapatellar tissues. By many, it is employed as the only operative step in the treatment of fractures of the patella.

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(Concluded in February issue.)

Editorial

SPINAL ANAESTHESIA.

PROFESSOR JONNESCO, of Bucharest, demonstrated in America his new method of general anæsthesia by spinal injection with an appreciable degree of success and safety. He has taught the profession all over the world that high injections even when the head is lower than the level of the spine do not produce bulbar paralysis as believed by the more conservative surgeons.

He believes that the addition of strychnine to the stovaine acts more quickly than the stovaine and stimulates the bulb so effectually that the subsequent paralyzing action of the stovaine is not sufficient to produce the feared paralysis.

Before operating on a number of patients, in the Clinical Amphitheatre of the Medico-Chirurgical Hospital he made the following remarks:—

“There are two essential points of novelty in this method: (1) The puncture is made at the level of the spinal column appropriate to the region to be operated upon; (2) an anæsthetic solution is used which, thanks to the addition of strychnine, is tolerated by the higher nervous centers. The selection of the anæsthetic substance to be used will be determined by the surgeon’s experience or confidence in any particular drug. I prefer stovaine, which has given me excellent results, and which I know how to manage; but tropococaine or novocain are equally efficacious, and, thanks to the addition of strychnine, equally harmless.

“The solution must be made at the time when the operation is to be performed as follows: The necessary quantity of stovaine, tropococaine, or novocaine, is introduced into a glass tube with an india rubber stopper, and sterilized in the autoclave. The substances need not be sterilized since they are themselves antiseptic, and some of their properties would be destroyed by heat.

“The strychnine solution is made by dissolving 5 to 10 centigrams of neutral strychnine sulphate in 100 grams of sterilized (not distilled) water in a glass stoppered bottle previously sterilized; if 5 centigrams of strychnine are used, 1 cubic centimeter of the solution will contain $\frac{1}{2}$ milligram; if 10 centigrams, 1 cubic centimeter will contain 1 milligram. The weaker solution is used for the upper, the stronger for the lower puncture. As the strychnine takes some time to dissolve, it is better to prepare the solution a little before the time before it has to be used. With an ordinary Pravaz syringe provided with a needle for lumbar puncture, 1 cubic centimeter of the solution of strychnine, a syringe-ful, is drawn up and is injected into the tube containing the dose of stovaine judged to be necessary for the puncture to be made. The tube is corked again, and shaken, and the salts are dissolved. The same syringe is then filled with the contents of the tube, and is held with a sterilized compress and removed from the needle while the puncture is being made.

“I am convinced by experience that spinal anæsthesia was not so regional as I had believed, and that the medio-cervical puncture was as useless as it was dangerous. It favors the appearance of bulbar phenomena—nausea, vomiting, pallor of the face, faintness, momentary stoppage of respiration, and so on, phenomena due to a direct action of the anæsthetic fluid upon the bulb. Their occurrence may be avoided by making the puncture lower down between first and second dorsal vertebræ, which produces as perfect and deep analgesia for the segment of the body comprising the head, neck, and upper limbs as is produced by the medio-cervical puncture. Medio-dorsal puncture between the seventh and eighth dorsal vertebræ is very often difficult to perform, and is not necessary, for perfect analgesia of the lower segment of the thorax can be obtained by puncture made between the last dorsal and first lumbar vertebræ, which is easier to perform and produces also anæsthesia of the whole lower part of the body.

"I have therefore reduced sites of election for puncture to two—namely:—

"(a) Upper dorsal puncture between the first and second dorsal vertebræ is easily performed; the landmark is the vertebræ prominens with the visible and tangible protuberances of the spinous processes of the second and third dorsal vertebræ. When the patient's head is strongly flexed, so that the chin touches the sternum, the protuberances are very marked, and the spaces they bound are enlarged. The patient, being placed in this position, the surgeon marks with the forefinger of his left hand the space between the first and second dorsal vertebræ, and the needle, held between the thumb and forefinger and the middle finger of the right hand, is pushed in, following the upper border of the spinous processes of the second dorsal vertebræ. For operations on the head, neck, upper limbs, and thorax the puncture should be made in this situation.

"(b) The dorso-lumbar puncture between the twelfth dorsal and first lumbar vertebræ is very easily made, owing to the large space which separates the two spinous processes. I prefer this puncture to the classical lumbar puncture between the third and fourth lumbar vertebræ, because it produces most marked analgesia of the whole abdomen and lower segment of the body. The space is easily found, for it is necessary only to count the lumbar spines upwards. The patient is seated with the thorax bent strongly forward, as in ordinary lumbar puncture. In making the puncture, the forefinger of the left hand marks the space, while the needle is pushed in with the right hand, following the upper border of the underlying spinous process.

"In both cases the puncture is made in the median plane. Once the resistance of the skin has been surmounted, the needle must be pushed forward slowly, so as not to tear the tissues which are being transfixed. As a rule the needle enters easily as far as the dura mater, when a momentary resistance is felt; when this has been overcome, the flow of spinal fluid is diminished, it comes out drop by drop, whereas in the dorso-lumbar puncture it spurts out in a stream. This is the rule, but there are exceptions, for sometimes in the high dorsal puncture no fluid escapes; an effort at coughing will then usually suffice to make it appear, although it may be necessary to adapt a sterilized syringe to the needle in order to aspirate the fluid. If no fluid is thus obtained, the surgeon must conclude that his needle is not in the arachnoid cavity; the point of the needle must be disengaged, drawn back slightly, and pushed in again until the space is found.

"The amount of stovaine and strychnine in the anæsthetic mixture should vary with the site of the injection, the patient's age, and his general condition. I confine my remarks to stovaine, as it is the drug with which long practice has made me familiar, so that I can administer it with precision and safety. I cannot speak with equal confidence of other anæsthetics, such as novocaine and tropococaine, with which I have had little experience.

"The variation in the quantity of strychnine is not relatively great. For the higher dorsal injection I employ: For children of from 1 to 5 years $\frac{1}{3}$ milligram in 1 cubic centimeter. The solution is made by dissolving $3\frac{1}{2}$ centigrams of neutral strychnine sulphate in 100 grams of sterilized water.

For children above five years, for adolescents, adults, and aged people the solution contains $\frac{1}{2}$ milligram of neutral strychnine sulphate in 1 cubic centimeter, and is made by dissolving 5 centigrams of the strychnine salt in 100 grams of sterilized water. For dorso-lumbar injection, for children from 1 to 10 years old, I use a solution containing 1 milligram of the strychnine in 1 cubic centimeter; for children above 1 year, adolescents, adults, and old people, a solution containing 1 milligram in 1 cubic centimeter, made by dissolving 10 centigrams of the neutral strychnine sulphate in 100 grams of sterilized water.

"The amount of stovaine varies with the site of the injection, the patient's age, and his general condition. For the higher dorsal injection I use for children from 1 to 5 years old, 1 centigram; from 5 to 15 years, 2 centigrams; for adolescents, adults, and aged people, 3 centigrams. For the dorso-lumbar puncture, for children from 1 to 5 years, 2 to 3 centigrams; from 5 to 15 years, 4 to 6 centigrams; for adolescents from 15 to 20 years old, 6 to 8 centigrams; for adults and aged people, 10 centigrams. The dose of stovaine must also be adapted to the general condition of the patient. In persons who are consumptive, very anæmic, who are suffering from auto-intoxication or grave infections, or who have suffered severe injury, or are ischæmic owing to profuse hæmorrhage, 5 or 6 centigrams of stovaine produce sleep and prolonged analgesia, and larger doses are badly tolerated, causing pallor of the face, nausea, vomiting, and transient faintness.

"The analgesia when the anæsthetic is administered in the manner described, lasts from one and a half to two hours, a period longer than is necessary to perform any operation. I should add for the benefit of the surgeons inexperienced in spinal analgesia, that though the condition may be obtained with less than 3 centigrams of stovaine in high dorsal puncture, and less than 19 centigrams in the dorso-lumbar puncture, the anæsthesia neither so deep or so durable. With 8 centigrams analgesia may be produced, but the patient preserves sensation of contact and of traction on the viscera, or on the sides of the wound. With 10 centigrams all sensation is abolished; for this reason there should be no hesitation in using doses which seem large, but which are harmless and produce complete anæsthesia. If an operation has lasted so long that the analgesia passes off, I make another puncture with the patient in the dorsal decubitus, and in this way analgesia may be prolonged as may be necessary without inconvenience. The dose used for the second injection should be either equal to that given in the first or smaller, according to the probable duration of the operation."

According to Professor Jonnesco's report it seems that stovaine is absolutely safe in his hands but the hundred and twenty-five or more of the high injections thus far made are not sufficient to give the method a high standard of safety, and just what position spinal anæsthesia is destined to hold in the field of surgery in the future cannot at this time be foretold. We are still of the opinion that spinal anæsthesia is dangerous and especially the high injection method where the puncture is made between the first and second dorsal vertebræ. The haphazard use of new anæsthetics especially when the composition of the drug is unknown to the profession should be avoided. We need only refer to the use of ethyl chloride when it was first employed as an anæsthetic.

A few days ago when a representative of the *Public Ledger* called upon me and requested some information as regards the use of stovaine as a spinal anæsthetic, I had no intentions of making any reflections upon Professor Jonnesco as a gentleman, surgeon or member of the medical profession. Indeed, I only incidently referred to the commercial aspect of the matter, and regret if I was misunderstood and a personal inference drawn from my remarks.

It is unfortunate that many of the newspapers have misunderstood the purpose of Professor Jonnesco's visit to America and have announced spinal anæsthesia as new to surgery.

Spinal anæsthesia was first practiced by Dr. J. Leonard Corning, of New York, some twenty years ago.

The writer believes that the spinal canal should never be invaded for anæsthesia unless no other resource is left to the surgeon. It is perfectly possible that any injection into the arachnoid space, no matter what the drug might be, may produce a disturbance of the trophic centers and eventually do harm to the patient. Should infection result what will be the consequence? No surgeon shall ever practice spinal anæsthesia on the writer.

Materia Medica and Therapeutics

ADRENALIN IN THE TREATMENT OF GENERAL PERITONITIS.

Dr. Heineke, in an abstract of a paper read at the thirty-eighth Congress of the German Surgical Society, throws much doubt on the conclusions of Heidenhain on the high value of intravenous injections of adrenalin in the treatment of the collapse due to acute general peritonitis. The assertion that adrenalin thus administered is capable of doing good service in such cases is in contradiction, it is held, with the results of physiological research, which show that in a subject under normal conditions this agent fails to establish beyond a very brief period any increase of the blood-pressure. In his own surgical experience Heineke has met with a similar result, as in most of the cases of acute peritonitis in which he injected a solution of adrenalin he observed but a very transient increase of pressure. The

collapse was usually fatal, and in the exceptional cases of recovery the good result was due, he believes, to the associated use of salt solution. By the results of a recent course of experiments on animals with simple solutions of adrenalin and mixed solutions of this substance and common salt, Heineke has been convinced that the benefit occasionally obtained from the injection treatment of acute and general peritonitis with intense collapse is entirely due to the action of the salt solution. While in accord with most surgeons as to the great efficacy of salt solution in cases of collapse, he points out that such treatment is not constant in giving good results, and that now and then it fails altogether. In suggesting an explanation of these contradictory results, the author states that salt solution acts most surely and effectually in those cases in which it serves as a

substitute for any large loss of fluid derived from the blood by excessive vomiting and abundant effusion into the peritoneal cavity. The addition, however, of adrenalin to salt solution in cases of intense collapse is not to be regarded as quite futile. A temporary increase of the blood pressure may, it is pointed out, enable the patient to survive a very critical moment, and for this reason adrenalin injections, though useless in the deep and persisting collapse of peritonitis, are indicated in cases of severe operation and accidental injury or mishaps from general and lumbar anæsthesia, and probably in some forms of poisoning and acute infection. (*Zentralbl. f. Chir.*, No. 31, 1909.)

BENZIN TO DISSOLVE FAT-LIKE BODIES IN BLADDER.

Dr. C. Posner reports his treatment in a patient with good results. The patient was an elderly woman who had recurring inflammation of the urethra after removal of polyps four years before. Medicated bougies were ordered which she introduced in the urethra herself, but with exaggeration of the previous symptoms, the serious disturbances now simulating a calculus in the bladder. Fat globules were found floating on the urine and the cystoscope revealed small lumps of fat which were traced to the cocoa-butter vehicle of the medicated bougies. After rinsing out the bladder with salt solution, Dr. Posner injected 15 cubic centimeters of pure benzin, which was retained for 15 minutes. All disturbances ceased at once, as the bladder was thus completely cleaned out, without by-effects of any kind. The bougies used had been unusually long, fully 11 centimeters in length. (*Berliner klinische Wochenschrift*, August 23, 1909.)

CHRONIC CATARRHAL DEAFNESS, TREATMENT OF LATE STAGES OF.

Dr. M. Yearsley, London, Sixteenth International Congress at Budapest, states that much as we are able to do in the early stages of chronic middle-ear catarrh by proper treatment, little influence is noticed in the late stages. But even here proper therapy can show some results. Of importance is the prophylactic intranasal treatment. The first indication for a successful therapy is an exact diagnosis by careful functional tests. If the tube is the seat of the disease, an inflation with eventual bougieing in stenosis is of great value, whereas electrical method is of little use. Of the intratympanic injections the author has used menthol oil, iodine solutions, pilocarpin, etc., menthol giving the best results. Pneumo-massage is indicated in fixation of the ossicles, in this method the rapidity of the vibration is of more importance than the force. The injection of fibrolysin is of value in some cases. Of the operative measures to be considered in the first place, is the mobilization of the malleus, besides this synechotomy and tenotomy of the tensor, eventual excision of the malleus and incus. (*Medical Fortnightly*, November 25, 1909.)

COLON TUBE AND THE HIGH ENEMA.

Dr. H. C. Soper, St. Louis, describes experiments performed by him in which the position of the tube was verified by the X-ray. Sixty cases were examined where it was attempted to pass long, blunt end, soft rubber tubes, with side openings, into the rectum, the patient being in the knee, chest, and side positions. The only case in which he succeeded in passing the tube above the dome of the rectum was one of Hirsch-

sprung's disease or congenital idiopathic dilatation and hypertrophy of the colon, and even here it was necessary to use the sigmoidoscope to introduce the tube. He thinks it is only in cases of abnormal development of the sigmoid that it is possible to introduce a soft rubber tube higher than six or seven inches in the rectum. A short tube six inches in length is therefore best for all sorts of enemata when using water for fæcal evacuation, and it is possible, as he has frequently demonstrated, to thoroughly cleanse the entire colon by using a large caliber (one-half inch) short tube. It is also best when retention of liquid is desired. (*Journal of the American Medical Association*, August 7, 1909.)

ETHYL CHLORID AS AN ANÆSTHETIC.

Dr. Sill, in the *Medical Record* extols the merits of ethyl chlorid, in which we have a comparatively safe and reliable general anæsthetic, which is most suited for operations for the removal of adenoids and tonsils in children. The anæsthetic is simple of administration and does not require an expert or one of large experience to give it. The patient is under the influence quickly, is out almost immediately upon completion of the operation; there are no unpleasant or dangerous effects from its use either during or after the operation. The anæsthetic is not only especially applicable in operations in the throat, but should be used in most of the other operations performed upon children. When the inhaler is kept over the patient's nose and mouth he can be kept under the anæsthetic as long as desired. It is only when that is removed that the patient regains consciousness more quickly than with other anæsthetics. Where long opera-

tions are necessary on the nose or throat he advises first putting the patient under ethyl chlorid and then continuing deep anæsthesia with ether, using the drop method. (*Medical Standard*, November, 1909.)

HÆMATOCELE AFTER ECTOPIC PREGNANCY, TREATMENT OF.

Dr. P. Esch believes that every hæmatocele should be removed by early operation in order to prevent serious complications, especially secondary hæmorrhage, decomposition of its contents, suppuration, peritonitis and pressure by the tumor upon the adjacent organs. In the last sixteen months nineteen cases of extrauterine pregnancy have been treated in the Gynecological Clinic at the University of Greifswald, including two of freshly ruptured tubal pregnancy and fifteen of hæmatocele. All these recovered after operation, with the exception of one case in which diffuse peritonitis had developed prior to admission. The abdominal route, with Pfannenstiel's incision, was preferred as affording a clearer view of the parts in hæmatocele. This enables the operator to separate adhesions with less risk, to avoid injuries to the adjacent parts, to more thoroughly control hæmorrhage, and also to remove all remnants of the pregnancy. Simple vaginal incision with drainage was reserved only for abscess cases, and in these removal or irrigation of infectious material was avoided to prevent extension of the process. If, notwithstanding all precautions, the general condition of these patients becomes worse, abdominal section should be attempted as a last resort, and, if possible, by the extra-peritoneal method. (*Münch. Med. Wochens.*, No. 32, 1909.)

**HOT MUD BANDAGES AND COMPRESSES
IN CHRONIC EXUDATIVE ADNEXAL
INFLAMMATIONS AND PELVIC EX-
UDATES.**

Dr. Nikolaus Cukor advocates the use of hot mud compresses over the abdomen in exudative inflammations of the pelvis and adnexa. The mud is heated much more slowly than water, and cools much less quickly. The heat is much better borne by the patient than in hot water applications, and about 10 degrees greater heat can be applied in this way. The mud used is the result of the decay of plants for thousands of years, and is a non-conductor of heat. If the surface be covered with woolen cloths, the heat will be retained for several hours. The effects of the application are hyperæmia, dilatation of the pelvic blood-vessels, and on account of the weight of the mud pressing out the blood from the vessels, and the transudation of leucocytes and phagocytes, the removal of exudative material. The treatment is contraindicated in acute cases with fever and pus formation. The applications may be made conveniently by the patient at her own home while lying down. The greater temperature that can be applied and less perspiration caused, make this treatment superior to hot air applications. (*Gyn. Rundschau*, 1909, *Jahr*. 111, *Bd.* xiii.)

HUMAN BLOOD IN SEVERE ANÆMIA.

Dr. A. Weber reports seven cases from Voit's medical clinic, at Giessen, in which threatening anæmia was influenced to a remarkable extent by transfusion of only 5 cubic centimeters of human blood. No benefit was observed in a number of cases of leucæmia. The transfusion of this small amount, he states, is simple and generally harmless, but in a few cases there were signs of mild disturbances after the transfusion. It seems as if the

blood from certain poisons displayed more toxicity than from others, three patients injected with a certain blood all presenting the same transient disturbances. It was never noticed that when two or more patients received blood from the same source, the one presented disturbance and the other did not. (*Deutsches Archiv für Klinische Medizin*, *Leipsic*, September 4, 1909.)

IODIN AS A DISINFECTANT IN ABDOMINAL AND OTHER OPERATIONS.

Dr. Charles Jewett, Brooklyn, states that some hours before the operation the field is shaved dry and is then painted with a 10 or 12 per cent. tincture of iodine. No water or other liquid is permitted to come in contact with the skin. The surface is covered with a dry sterile dressing. On the operating table the painting is repeated. As an additional precaution the author shaves and thoroughly cleanses the skin twelve hours before the iodine is applied.

The author has obtained primary union in every case in which this method was resorted to. (*Medical Record*, August 14, 1909.)

LUPUS ERYTHEMATOSUS, TREATMENT OF.

Dr. Malcolm A. Morris, London, states that this disease is a chronic inflammation of the skin, local in origin, and depending on a condition of the circulation which makes the integument prone to vasomotor disturbance. This may cause a predisposition to toxic infection, but neither the fact of such infection nor its nature has been positively demonstrated. Each case must be dealt with according to its peculiarities. The treatment should be constitutional and local. Under the former head must be included careful regulation of diet, so

that the intestine may not be loaded with materials that may form a favorable soil for infection. Anything like coffee or tea which causes flushing of the face, is contra-indicated. Quinine is often useful. Locally, in the hyperæmic stage, he prescribed cooling lotions and ointments of subacetate of lead. Ichthylol in the form of a lotion or an ointment he also found to be among the most useful of local remedies. In chronic cases the constant application of a strong solution of ichthylol is the best remedy, but iodine liniment is also valuable. In severe conditions linear scarification or light touches of the thermo-cautery he found them to give good results. In subacute cases he has sometimes used high-frequency currents and in chronic cases the Finsen light and the X-rays with success. These remedies are particularly useful in the later stages when there is thickening of the integument. Radium may be applied to limited areas for the same purpose. (November, 1909.)

OXYGEN IN PERTUSSIS.

Dr. Weil has used oxygen in the treatment of threatening paroxysms in whooping-cough in thirty cases, and has found it a valuable aid in warding off broncho-pneumonia and suffocation. The oxygen is given at each paroxysm,

if possible just as it begins. The cyanosis subsides and the child is relieved and keeps in good condition, with appetite throughout. The oxygen renders the lung aseptic and thus may arrest incipient infectious processes. The oxygen must be used freely, at least 10 or 12 liters are necessary to control a paroxysm, and if there is danger of broncho-pneumonia, the oxygen should be inhaled systematically every hour. It is best inhaled through a funnel during the paroxysm and can thus be given even when the child is asleep. (Lyon Medical, Lyons, August 22, 1909.)

PERITONITIS, TREATMENT OF.

Dr. Dege discusses the arguments for and against flushing the abdominal cavity in treatment of perforative peritonitis, and describes a case in which ileus followed later from a band like adhesion which had evidently formed around the drain and tampon. He argues that the proper course is between the two extremes, restricting the amount of tamponing and never inserting a tampon between loops of intestine. In his experience the Fowler position has always had a favorable influence on the course of the peritonitis. (Deutsche medizinische Wochenschrift, Berlin, August 19, 1909.)

Book Reviews

INDEX-CATALOGUE OF THE LIBRARY OF THE SURGEON-GENERAL'S OFFICE UNITED STATES ARMY. Authors and Subjects. Second Series. Volume XIV, Q-RZEHA. Washington: Government Printing Office, 1909.

This is the fourteenth volume of the second series of this Index. The volume includes 10,019 titles, representing 5,821 volumes and 8,158 pamphlets. It also contains 4,065 sub-titles of separate books and pamphlets, and 31,370 titles of articles in various periodicals. It includes all subjects written that pertain to medicine, both foreign and domestic.

The Index represents a considerable amount of labor and is most complete.

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No. 2

DR. SHOEMAKER'S RETIREMENT FROM THE EDITORIAL STAFF.

It is with deep regret that the editors must announce the retirement of Dr. John V. Shoemaker from the staff of this journal. In an article for the recently published "Founders' Week Memorial Volume," the writer took occasion to state that with a single exception the oldest medical journal in Philadelphia was the MEDICAL BULLETIN, of which Dr. Shoemaker had been one of the founders, and that under his able management, the journal had faithfully carried out its object which had been to aid the practicing physician in his daily humane work. Pressed for time by exacting duties in other directions, Dr. Shoemaker finds it necessary to withdraw after a continuous service of thirty years. He carries with him the kindest feelings and sincere wishes of his colleagues, who will ever bear in mind his uniform courtesy, his devotion to his friends, and the unbroken chain of pleasant relations they have had with him during the many years they have known him.

Original Articles

Department in charge of J. MADISON TAYLOR, A.M., M.D.

A STUDY OF HYPERCHLORHYDRIA.*

By GEORGE MORRIS PIERSOL, M.D.

PHILADELPHIA.

ALTHOUGH gastric hyperacidity is encountered with great frequency, it is now generally recognized that an excess of free HCl alone in the gastric contents is insufficient evidence upon which to base the diagnosis of that most frequent of the so-called gastric neuroses, hyperchlorhydria.

The analysis of three hundred cases of hyperacidity was undertaken with

* Read in the Section on Medicine of the Pennsylvania State Medical Society, Sept. 30, 1909, at Philadelphia.

the view of determining how often this abnormality in the gastric secretion could be attributed to a primary functional disturbance of the stomach as compared to the frequency with which it occurred as a symptom of some underlying organic condition. Furthermore, the etiology and symptomatology was studied in those cases which could be classed as true hyperchlorhydria.

Of the 300 cases 156 were hyperchlorhydria *per se*, while in the remaining 144 the hyperacidity was symptomatic of some lesion along the gastro-intestinal tract or of some general condition. For example: in 32 cases the hyperacidity was secondary to gastric dilatation, in 25 cases to chronic cholecystitis or gall-stones, and in 14 to gastric or duodenal ulcer.

Over a half of the 156 cases of hyperchlorhydria occurred between the ages of 20 and 40. Sex seems to be important as a predisposing factor since 70.5 per cent. occurred in males. Hyperchlorhydria was found much more frequently in those who lead sedentary lives and labor under constant mental and nervous strain, than in those whose work is largely manual; while indiscretions in diet and the use of alcohol, coffee and tobacco were shown to be important etiologic factors in the production of hyperchlorhydria.

The symptoms were found to be variable and to comprise local gastro-intestinal, and general nervous manifestations. The gastric symptoms usually described as typical, namely: Epigastric distress becoming pain, gaseous and acid eructations, pyrosis, nausea and the vomiting of acid material, were not observed with sufficient constancy in the series to indicate that they are in themselves of diagnostic value. Pain or burning, worse two hours after meals, was present in 42.2 per cent. of cases, while acid eructations occurred in only 26.9 per cent., acid vomiting in 16 per cent., and pyrosis in but 8.9 per cent.

Constipation, more or less obstinate in character, existed in over 50 per cent. of the patients. In eleven cases diarrhoea was present and a like number complained of constipation alternating with diarrhoea.

As a rule the appetite was said to be good and as a general thing the patients were well nourished, although 31.6 per cent. showed noteworthy loss of weight.

Among the more common nervous phenomena exhibited were periods of depression and mental confusion, irritability, the various phobias, numbness, paræsthesias, and attacks of weakness and faintness. Vertigo was complained of by 28 of the patients.

From the character of the gastric contents in this series it appeared that the digestive power in hyperchlorhydria is but little impaired. In 125 cases the solid portion of the test-meal was well digested. Moreover, in 110 instances the digestion of starch was good. Retention existed in but 18.5 per cent. of cases and hypersecretion was noted in only 19 of the 156 patients.

The examination of the fæces revealed that as a rule occult blood was not present and that the stools showed with great uniformity good starch and meat digestion.

The reaction of the urine was generally decidedly acid and for the most part the specific gravity ranged between 1020-1025. Indican was found in 50 per cent. of the urines examined and varied from a normal amount to a slight excess. Upon the whole it seems probable that no constant relation-

ship existed between the indican eliminated in the urine and the degree of gastric acidity.

No noteworthy changes were found in the blood. In 70.3 per cent. the hæmoglobin was normal or above. Such anæmia as existed in a few of the patients depended chiefly upon a diminution of the coloring matter, rather than upon a reduction in the number of red blood-corpuscles.

ADRENAL THERAPY.*

By CHARLES E. DE M. SAJOUS, M.D., LL.D.,

Professor of Therapeutics and Pharmacology in Temple University,
Philadelphia.

To make it possible to define with any degree of scientific accuracy the therapeutic use of adrenal preparations, the actual purpose or function of the adrenal secretion in the organism should be known. Oliver and Schäfer have shown that this secretion, as represented by adrenal extracts, raises the blood-pressure by increasing the tone of the vascular and cardiac muscles, but this familiar effect can no more be considered as the function of the adrenals than the production of glycosuria or arterial sclerosis by injections of adrenalin can be deemed such. Indeed, many other effects traceable directly to the adrenals have not even been, so far, submitted to analysis. Oliver and Schäfer,¹ Reichert,² Morel,³ Lépine⁴ and others, for instance, have observed that adrenal preparations caused a rise of temperature. As is well known also, excessive adrenal tissue development such as hypernephroma and interstitial adrenal hæmorrhage, may cause a rise of temperature quite sufficient at times to constitute a veritable hyperpyrexia.

The influence of the adrenals on metabolism is another phenomenon which physiologists have failed to explain. The rise of temperature produced by adrenal extractives was found by Reichert⁵ to coincide with increased metabolic activity. The controlling power of the adrenals themselves is likewise strikingly shown in malignant adrenal hypernephroma by the physical overgrowth it may cause, a child of five years attaining, in some instances, that of one of sixteen years, and showing, by its excessive appetite and other phenomena, that its cellular exchanges are being carried on at an inordinate rate. In fact Otto, Marchand and others pointed out nearly two decades ago that simple hyperplasia of the adrenals caused premature development.

Even the oldest coherent syndrome of adrenal origin, Addison's disease, stands before us as a mere catalogue of effects. We know that in virtue of the gradual loss of adrenal functions, there appear, in more or less rapid succession: asthenia, profound lassitude, digestive disturbances, dyspnœa, hurried and irregular action of the heart, anorexia, emaciation, bronzing, hypothermia,

* Read by invitation before the Chicago Medical Society, December 8, 1909. By special arrangement this paper will also appear in the current number of the "Interstate Medical Journal."

coldness of the surface, and, finally, as the precursors of death, delirium, coma and convulsions. These effects of gradual annihilation of the adrenals, through destruction of their parenchyma or of their nerve paths, have remained quite as obscure, as to the manner in which they are produced and the function of the adrenals of which they denote the gradual extinction, as the phenomena of over-activity just reviewed.

It is plain that under these conditions it is impossible to analyze intelligently the therapeutic use of adrenal preparations, and it is because of this that I am obliged to treat the question from the standpoint of my own researches. I may add, however, that materially as my interpretation of the rôle of the adrenals in the economy differs from that of all other investigators, it explains the phenomena, experimental and clinical, they have all recorded, besides accounting for those to which they had not devoted their attention.

In 1903, I advanced the view that it was the adrenals which supplied the internal secretion that various physiologists, especially Bohr, had deemed necessary to account for the absorption of oxygen from the pulmonary air. Referring elsewhere⁶ for the complete chain of evidence in support of these facts, I will merely recall that while the adrenal secretion is endowed with a powerful affinity for oxygen, it can be traced at every step from the interior of the adrenals to the pulmonary air-cells to be taken up by the hæmoglobin molecule, and that it represents therein a constituent which physiologists had long recognized, but the identity and origin of which they had not shown.

The bio-chemic evidence all points to the correctness of this interpretation, even to the presence of the adrenal principle in the red corpuscles as a constituent of their hæmoglobin, which has been recently furnished by Mulon, of Paris. The presence of the adrenal product in the hæmoglobin, the blood-plasma, the milk, the tissues, various secretions, the placental blood, the bronze patches of Addison's disease, further indicates that the adrenal principle is distributed to all parts of the organism and that the adrenal secretion is related with a general function besides that of pulmonary respiration, i.e., tissue respiration or metabolism. This is quite in keeping with Howell's statement⁷ that "the physiological oxidations of the body cannot be separated from the general metabolic phenomena of the tissues."

On the whole, the adrenals carry on functions of the first order in the organism, from my viewpoint: *they are the source of the constituent of hæmoglobin which takes up the oxygen from the pulmonary air, to carry it to the tissues and sustain general oxidation therein, and also, therefore, metabolism and nutrition.*

If this brief outline of the purpose of the adrenals is clearly apprehended, the many physiological, pathological and pharmacological phenomena attributed to them or to their preparations can be readily accounted for and explained. The rise of temperature noted by Schäfer, Reichert, Lépine and others after the use of adrenal extract, is a normal outcome of the increased tissue oxidation it causes. The coincidence of the rise of temperature with increased metabolic activity noted by Reichert, is also readily explained, since oxidation and metabolism are inseparable processes. The familiar rise of blood-pressure

is itself but an expression of enhanced metabolism in the vascular muscles by direct and indirect action of the adrenal principle, the resulting contraction of the vessels being the cause of the rise of blood-pressure. While the slowing of the heart's action is the normal outcome of the increased resistance offered by the blood column, compensation is provided for by the increased vigor of cardiac contractions, caused, in part, by the increased metabolic activity of which the heart muscle is also the seat.

As to the various pathological conditions of the adrenals enumerated, we can understand why hyperplasia of these organs, or the excess of adrenal tissue which constitutes hypernephroma, can, by enhancing inordinately their functional activity, raise markedly the temperature, and even provoke the hyperpyrexia occasionally observed. The influence of the adrenals on metabolism and nutrition also accounts for the surprising overgrowth and premature development in children afflicted with malignant hypernephroma, a condition in which the adrenal tissue is greatly, and sometimes enormously, in excess.

Conversely, we have in Addison's disease, with this conception of the physiological function of the adrenals before us, a typical example of gradual cessation of the vital functions, oxidation, metabolism and nutrition. The progressive muscular weakness and asthenia betoken pointedly lowered metabolism, while the hypothermia as clearly indicates reduced oxidation, and the emaciation inadequate nutrition. So great is the vital process *per se* undermined, in fact, that, as observed by Rolleston⁸ these cases sometimes emit a cadaverous odor. The bronzing itself testifies in this direction, since it denotes increasing loss of tone of the pre-capillary arteries, in keeping with a similar condition of the entire arterial system, and stagnation of the blood-plasma in the cutaneous capillaries. Indeed, Boinet⁹ and Mühlmann¹⁰ have shown that the bronze pigment actually consists of the adrenal product—which becomes brown or even black on exposure to the air.

All the phenomena that follow extirpation of both adrenals also become self evident. The temperature steadily recedes, evidence that general oxygenation is progressively decreasing; the blood-pressure is gradually lowered, in keeping both with the cardiac pulsations, which become almost imperceptible, and with the general muscular weakness which becomes such that the animal can no longer stand. These phenomena clearly emphasize the interrelationship that exists between oxygenation and tissue metabolism; arrest of the one involving cessation of the other. The frequent though shallow respirations and the cyanosis afford indirect evidence of gradual respiratory failure while the rapid onset of coma, sometimes lapsing into convulsions, soon followed by death, exemplifies the all-important utility of the adrenals in the vital process.

With this conception of the physiological purpose of the adrenals before us, it becomes possible, it seems to me, to interpret the therapeutic application of adrenal preparations rationally, that is to say with a more precise understanding of their mode of action than heretofore. The disorders in which adrenal preparations are indicated can be divided into four general classes: (1) those in which they compensate for functional incompetence of the adrenals; (2)

those in which they restore the cardio-vascular equilibrium; (3) those in which they restore the respiratory equilibrium in the lungs and tissues, i.e., the vital process itself; (4) those in which they promote the efficiency of the immunizing process.

Diseases in which adrenal preparations compensate for functional incompetence of the adrenals. The disorder which stands foremost in this connection is, of course, Addison's disease. The history of the therapeutic use of adrenal preparations, to which I will add grafting of adrenal tissue, illustrates clearly the disadvantages, nay the dangers, of the tentative use of any remedy without a clearly defined conception of its physiological action. Out of 120 cases treated by means of adrenal preparations or grafting found in literature, about 40 per cent. showed little or no improvement, 30 per cent. were markedly improved, and 20 per cent. obtained permanent benefit—up to the time at least the reports were made. This is not a bad showing for any remedial agent; but could we not, with the functions of the adrenals as I have outlined them, hope to increase the proportion of recoveries? Suggestive in this connection is the fact that with the adrenals as the primary organs in oxygenation and metabolism, the cause of the deaths that have occurred under the use of adrenal preparations or grafting can be clearly recognized, and, therefore, guarded against in the future. Courmont¹¹, for example, refers to "formidable hyperthermia" and prompt death after grafting dog's adrenals in advanced cases of Addison's disease. When we recall that Schäfer¹² judging from the action of adrenal preparations on the blood-pressure, states that "in order to produce a maximal effect, a dose of not more than fourteen millionths of a grain of the active material per kilo of body-weight is all that is necessary," we can readily understand, in the light of my views, how the products of two entire fresh adrenals grafted into the tissues, could produce the "formidable" rise of temperature observed, and death.

The lesson to be derived from these lamentable instances is that the quantity of adrenal substance grafted or the dose of adrenal preparation administered must be carefully adjusted to the needs of *each* patient. This is further emphasized by the fact that the extent to which the adrenals are destroyed, or are rendered insufficient through disease of their extrinsic nerves, varies with each case, a mere vestige of adrenal tissue sustaining the general oxidations in the one, while considerable adrenal tissue is still functionally active in the other. Extremes in this connection are well shown in two of the cases that were materially benefited; in one of these, reported by Bate¹³ but $\frac{1}{12}$ grain (0.005 gm.) of adrenal extract thrice daily sufficed; in the other, reported by Suckling¹⁴, a daily dose of ten grains (0.01 gm.) had gradually to be increased until 175 grains (11.4 gms.) were given daily. On the whole, the one great fact emphasized is that adrenal preparations should never be used empirically in Addison's disease, and that in view of the direct rôle the adrenals play in the oxidation processes, the *temperature* of the patient, with his blood-pressure as control (we have seen that they run parallel), should be taken as guide.

Inadequate action of the adrenals occurs in other diseases to which reference will be made in a subsequent heading.

Diseases in which adrenal preparations enhance the cardio-vascular equilibrium, and metabolism. Kothe¹⁵, Rothschild¹⁶, Crile¹⁷ and others have obtained prompt recovery (after all other means had failed in Kothe's cases) in surgical heart failure from intravenous injection of adrenalin in saline solution. Mankowsky¹⁸, Bates¹⁹, Floersheim²⁰, Deeks²¹ and Boy-Teissier²² have urged the value of adrenal preparations in cardiac disorders accompanied by weakness, particularly when there is dilatation, cyanosis or œdema. Here, two distinct, though concurrent and mutually helpful effects of the adrenal principle prevail in so far as the heart is concerned.

In 1853 Brown-Séquard²³ found that the venous blood of the *venæ cavæ* contained some substance which contributed to the contractions of the heart. A contemporary promptly relegated this experimental fact to oblivion, by showing that carbonic acid, the only excitant credited to venous blood, failed to cause an exposed heart to contract. Had it not been for this misdirected experiment and the readiness with which physiologists accepted the experimenter's verdict, it is probable that Brown-Séquard over fifty years before Oliver and Schäfer, would have discovered that, in Schäfer's words²⁴, the adrenal extract produced "a powerful physiological action upon the muscular system in general, but especially upon the muscular walls of the blood vessels, and the muscular wall of the heart." He would then, moreover, have reached the obvious conclusion to which I was subsequently led, that inasmuch as the adrenal secretion passed by way of the adrenal veins to the inferior vena cava, it was inevitably carried to the right heart in the blood of this great channel, and that it was the adrenal secretion, therefore, which helped the heart to contract.

This explains the beneficial influences of adrenal preparations in heart failure and in chronic heart disorders of an adynamic type. Their active principle ultimately reaches the *venæ cavæ* and excites *directly* the muscular elements of the right heart. Besides this, however, the entire cardiac muscle is also, from my viewpoint, excited *indirectly*. The adrenal active principle being carried by the venous blood from the heart to the pulmonary air-cells, it is added to that already in the blood, and becomes converted into the albuminous constituent of hæmoglobin, which, as we have seen, sustains oxidation. In this form it returns from the lungs to the left ventricle, with the arterial blood it has enriched, to be distributed to the body at large. When we recall that the first arteries given off by the aorta are the coronaries, whose branches supply the heart muscle proper, it becomes evident that the entire heart is the first to receive blood freshly laden with oxygen. On the whole the adrenal secretion itself contributes to the heart's working power in two ways: (1) by enhancing directly the contractile power of its right ventricle and (2) by sustaining oxidation and metabolism of the entire cardiac muscle.

Emphasis must be laid upon an important practical fact in this connection, namely: that the obvious purpose of the direct aid the right ventricle receives from the adrenal secretion is to assist the walls of this ventricle in projecting the venous blood into the lungs. This explains the rapidity with which cardiac dyspnoea is relieved by adrenal preparations; they not only

restore to the right ventricle its power to drive the venous blood adequately to the air-cells, but they supply it with the pabulum which enables it to absorb from the air enough oxygen to restore the general respiratory equilibrium. The increased metabolic activity in the vascular muscles being also enhanced, passive œdema is also caused to disappear, while the dilated heart tends to resume its normal dimensions.

The asthma of cardio-vascular adynamia, often met in elderly subjects, is promptly relieved in the manner just described, but this applies also to true asthma, as shown by S. Solis-Cohen²⁵. This result is explained, from my viewpoint, not only by the increased oxygen intake and the improved tissue oxidation just mentioned, but also by the more perfect hydrolysis of the toxic wastes to which the spasm of the bronchial muscles, and therefore the asthmatic paroxysms, are due.

Diseases in which adrenal preparations restore the respiratory equilibrium in the lungs and tissues, i.e., the vital process itself. This refers mainly to an important feature of the problem, to wit, the participation of the whole organism in the improved oxygenation. The prompt arrest of a paroxysm of asthma by the hypodermic injection of five to ten drops of the 1-1000 solution of adrenalin chloride for example, has been termed "inexplicable" and "marvelous"; but if the adrenal principle is considered as the active factor in general oxidation, and it is recalled that according to Takamine, one two-hundred-thousandth of a grain of adrenalin (and this applies as well to other adrenal principles such as suprarenalin, epinephrin, etc.) suffices to awaken physiological action, one can readily understand why many times this dose will produce therapeutic effects. Especially does this assert itself when we take into account a fact I have long urged, to wit, that we must look upon the active principle of the adrenal secretion, not merely as a reducing agent, but as a *catalyzer* which, though remaining itself stable, can take up oxygen and transfer it with extreme rapidity and in relatively enormous quantities, to the hæmoglobin, and from this compound to the tissue cells. The adrenal active principle has not only been found in the red corpuscles by Mulon, as we have seen, but its catalytic action, first pointed out by Poehl, meets precisely the conditions deemed necessary by Moritz Traube in 1858, to explain the massing of oxygen in the tissue-cells necessary to normal metabolism. The prompt relief afforded by the adrenal active principle in asthma is thus due mainly to the fact that it suddenly and greatly increases not only the oxygen intake, but also the oxygen supplied to the tissue-cells through its all-powerful catalytic action.

Though apparently remote, pathogenically, from the disorders just reviewed, shock offers an example of a disorder in which the adrenal principle restores both the cardio-vascular and the vital equilibrium. Crile²⁶ as is well known, kept a decapitated dog alive ten and a half hours by the slow intravenous injection of a 1 to 50,000 or 100,000 solution of adrenalin in saline solution, but this can hardly be ascribed solely to the action of the adrenal extractive upon the blood-vessels, as is generally believed, since the same investigator resuscitated animals fifteen minutes after death, by the same treatment. Can

we consistently conclude that it was merely by enhancing the tone and contractile power of the cardio-vascular muscles in these animals that life was restored? The process assumes a more logical aspect when we consider the adrenal principle besides the cardio-vascular stimulant it is known to be, as the constituent of hæmoglobin which sustains oxidation and metabolism in the organism at large. As such it played a direct part in restoring life itself in the tissues. Administered in warm saline solution, the animal actually received, as regards their biodynamism, what amounted virtually to artificial blood, and their tissue cells, including the cardio-vascular muscles, were able to resume their functional activity.

This accounts also for the beneficial action noted by various observers in disorders due to functional exhaustion, especially neurasthenia and in trophic disorders of the skeleton such as osteomalacia and rachitis, since the nutrition of all kinds of tissue is enhanced. Intimately connected with the catalytic action just mentioned are the local effect of adrenal extractives such as suprarenalin, adrenalin, etc., in the nose, the eye, the urethra, etc. When the active principle is applied to a mucous membrane, it awakens through this property, violent metabolic activity and contraction not only in its cellular elements, but also in the muscular coats of its arterioles. These minute vessels are constricted so violently that their lumina are practically obliterated, thus preventing the entrance of arterial blood into the already contracted tissues, and causing the familiar blanching. Its action in arresting the various forms of hæmorrhage, epistaxis, hæmatemesis, etc., where it can reach directly the bleeding surface is thus clearly accounted for.

A kindred action is that observed in hæmoptysis, which has been treated successfully with adrenalin by a few clinicians, after all the usual remedies had failed. The oral use of any adrenal principle is at best uncertain. Others have reported successful results from the internal use of adrenal extract, 5 grains frequently repeated. The use of adrenal preparations in hæmoptysis appears dangerous, however, owing to the intense rise of blood-pressure they cause. They should be tried only, therefore, after the classic measures fail, eight to ten drops of the 1 to 1000 adrenal solution in a drachm of saline solution being given subcutaneously.

Diseases in which adrenal preparations promote the efficiency of the immunizing process. This phase of the physiological action of adrenal preparations is represented by their influence on infectious diseases. Abelous and Langlois pointed out in 1891 that the adrenals neutralized or destroyed toxic products of muscular metabolism, while Charrin, Wybaux²⁷ and others have urged the protective rôle which the adrenals fulfill in general infections. My own investigations have not only sustained these conclusions, but they have shown that when, after passing the pulmonary air-cells, the adrenal secretion becomes the oxidizing ferment of hæmoglobin, it combines with the thyro-parathyroid secretion and a tryptic ferment of pancreatic origin to form the familiar immunizing constituents of the blood. When, therefore, we add an adrenal active principle to the blood, we increase directly its immunizing activity. We also increase it indirectly, for inasmuch as it enhances oxidation and metab-

olism in all tissues, it does likewise in the structures which produce immunizing bodies.

This accounts, from my viewpoint, for the marked reduction in the mortality obtained by Hoddick²⁸ in cases of peritonitis following appendicitis accompanied by uncontrollable decline of the blood-pressure, cyanosis, and other evidences of collapse, and also in puerperal toxæmias, by the slow intravenous use of adrenalin in saline solution. Hoddick ascribes the lowering of the blood-pressure to paralysis of the vasomotor center; but as the toxæmia is the cause of this condition, an agent capable of counteracting both cause and effect is necessary. This is met by the adrenal principle. The influence of the saline solution in these cases must not be overlooked, however. Seven years ago²⁹ I urged that death was often due, in infectious and septic diseases, to the fact that the osmotic properties of the blood became deficient, and advised the use of saline solution from the onset of the disease. The great reduction in the mortality of pneumonia in the practice of men who have carried out this suggestion has demonstrated its value.

Important in this connection, however, is the fact that the use of adrenal extractives might prove more harmful than beneficial in sthenic cases, especially when the febrile process is very active and the blood-pressure high. The saline solution alone is indicated under such conditions. But when, as in Hoddick's cases, the blood-pressure is low and there is cyanosis, it is because the dangerous stage which the saline solution would have prevented has been allowed to come on. Here the addition of an adrenal principle to the saline solution is of distinct advantage, precisely as it is in collapse due to other causes, while simultaneously enhancing the immunizing properties of the blood and thus counteracting the pathogenic agents.

The most striking influence of adrenal preparations on the immunizing process is illustrated by the beneficial action in the advanced stage of febrile infections, including the exanthemata and toxæmias. Exhausted through prolonged overactivity, the adrenals are unable, as they are in Addison's disease, to secrete enough of their product to satisfy the needs of the organism, and, besides, to sustain the immunizing processes to their full efficiency. Now, adrenal preparations have been found to counteract this evil trend. Hutinel, for example, found them of great value in the asthenic stage of scarlatina and measles. This applies also to the disorders such as diabetes mellitus, exophthalmic goiter and acromegaly in which the earlier stages are attended with marked general erethism and excessive oxidation. Here also, as in the infections and febrile toxæmias, the remedy is of signal help when the adrenals themselves have begun to fail; that is to say when the stage of prostration with low blood-pressure, a compressible pulse, hypothermia, and a tendency to syncope, has been reached.

In pleuritic effusions, as shown by Sir James Barr, injections of the adrenal active principle, after evacuating the cavity, prevents further secretion. This method has been applied to effusions in other locations, the tunica vaginalis, peritoneum, etc. Here the physiological action of the remedy brings in all the features I have enumerated, besides preventing re-accumulation by reducing

the permeability of the local capillaries. Hence the fact that in some of the cases reported, the general condition of the patient was also greatly improved.

Summary. The list of disorders in which adrenal preparations have been tried could be greatly extended, but I have limited myself to those in which their use has proven advantageous in the hands of a sufficiently large number of practitioners to warrant their being added to our trusted remedial agencies. Of these, a certain number may even be said, interpreted from my viewpoint, to exceed other means at our disposal in value. These are:—

1. Addison's disease. In this affection adrenal preparations compensate for the deficiency of adrenal secretion, and, therefore, for deficient general oxidation, metabolism and nutrition. The dosage should be adjusted to the needs of each case. Beginning with three grains of the desiccated extract three times daily after meals, the dose should be gradually increased until the temperature and the blood-pressure become normal, when the last dose should be maintained.

2. Surgical heart-failure, collapse from hæmorrhage, shock, asphyxia and submersion. Here the adrenal active principle (suprarenalin, adrenalin, etc.), as a catalyser and a constituent of the hæmoglobin, promotes energetically the intake of oxygen and its utilization by the tissue-cells, including the muscular elements of the cardio-vascular system, and thus causes them to resume their vital activity. It should be very slowly administered intravenously, five minims of the 1-1000 solution to the pint of warm (105° F.) saline solution. In urgent cases, ten drops of suprarenalin or adrenalin in one drachm of saline solution can be used instead, and repeated at intervals until the heart responds. Artificial respiration hastens its effects.

3. The toxæmias, including bacterial infections, surgical septicæmias, etc., when collapse threatens, especially when a persistently low blood-pressure, hypothermia, and cyanosis, are present. Besides enhancing pulmonary and tissue respiration, the adrenal principle, administered in the same way, enhances the efficiency of the immunizing process.

4. Capillary hæmorrhage from the pharyngeal, œsophageal, gastric or intestinal mucous membrane. The mastication of tablets of adrenal substance, or the oral use of powdered adrenal substance in five-grain capsules arrests the flow, by causing active metabolism in the muscular elements of the arterioles of the mucosa and constriction of these vessels.

I may add to these a series of disorders in which adrenal preparations will probably prove of great value when sufficient evidence will warrant a final conclusion. These are:—

1. Sthenic cardiac disorders with dilatation of the right ventricle, dyspnoea, and possibly cyanosis and œdema, owing to the direct action of the adrenal principle on the right ventricle and improved oxidation and metabolism in the cardio-vascular muscles and the tissues at large. Tablets of from one-half to two grains of the desiccated gland can be taken after meals.

2. Asthma, to arrest the paroxysms, by augmenting the pulmonary and tissue intake of oxygen and the cardio-vascular propulsion of arterial blood. From five to ten minims of the 1-1000 solution of suprarenalin or adrenalin in

one drachm of saline solution should be injected drop by drop into a superficial vein, or hypodermically.

3. To prevent the recurrence of serous effusions in the pleura, the peritoneum, the tunica vaginalis, etc., after aspiration, by reducing the permeability of the local capillaries and restoring the circulatory equilibrium. From eight minims to two drachms (according to the size of the cavity) of suprarenalin or adrenalin, in four times the quantity of saline solution, should be injected into the cavity.

4. In neuralgia or neuritis, applied to the cutaneous surface over the diseased area to produce ischæmia of the hyperæmic nerves and thus arrest the pain. One to two minims of a 1 to 1000 adrenalin ointment should be applied by inunction.

The doses advocated will appear small to many. I can only urge in explanation that the power of the adrenal principle, as shown by physiological chemists and my own investigations, is such, that it should be used with the greatest circumspection. Several recently reported deaths from its use emphasize the need of precautions when employing the hypodermic intramuscular and intravenous methods. Their oral use is at best unreliable. This does not apply to that of the gland itself, nor to the desiccated gland, one grain of which represents six grains of gland substance. These prove quite effective, though slowly in most instances, when the disorder or condition present actually involves the need of the adrenal principle, to enhance either the oxidizing power of the blood or its immunizing properties.

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THE MEDICAL EXAMINER'S WORK AS VIEWED BY A SPECIAL EXAMINER.*

By CHARLES OTIS CARTER,
SPECIAL EXAMINER, HARRISBURG, PA.

BEFORE venturing upon the discussion of any phase of your work, it is due to you as well as to myself to state that I am not speaking as the authorized representative of the Bureau of Pensions, though appearing by the consent of the Honorable Commissioner; that I am not skilled in the technical questions which you are called upon to consider; and that I profess no warrant for appearing before you except the summons of your worthy president and the fact that I am engaged in the special investigation of pensions and claims for pensions as directed by orders of the Commissioner.

In the investigation of pension claims the Special Examiner has in his hands all the papers in the case possessed by the government, including the medical record from the War Department, the testimony and all the medical reports. He must be as fully equipped as possible to understand every detail of the case from both the medical and the legal standpoint. It follows that, not being skilled in the technical questions in any case, the Special Examiner who is called upon to investigate a medical question is materially aided by a full and true medical opinion such as every report should contain. It does not often happen that we are called upon to go behind your opinions, and we, therefore, do not come into such intimate contact with you personally as we do through your reports. It sometimes happens that we recommend test examinations before another board, but that does not as often mean that your judgment is held by a layman to be in error as that a change of conditions may have arisen or added authority may be thought advisable before final action.

In your work as examining surgeons you are called upon to determine the one decidedly most important fact material to the merits of an invalid claim. In the performance of your duties you have assumed a responsibility which does not burden you in the ordinary duties of your profession. You are serving, not the patient, but the government. You are rendering an expert's opinion for the use of the bureau in the rating of the disability. You do not yourselves make the rating of the pension. The bureau does that, aided by your opinion, and your opinion rates only the disability. In the rating of a claim for pension the bureau has other questions to consider of which you may have no knowledge whatever, such as the army record which includes the medical record, the testimony as to prior soundness, origin in service and line of duty, existence at discharge and continuance since with the degree of disability from time to time. It follows that it is no part of the surgeon's duty to form any opinion as to whether the claimant is entitled to a pension. He is never competent to form such an opinion, should avoid forming any opinion as a finality, and is always warranted in the assertion that he has no opinion

* Read at the Eighth Annual Meeting National Association U. S. Pension Surgeons, Atlantic City, June 7, 8, 1909.

to express. When there are so many factors in the question that are not in the possession of the surgeon it is equally as absurd that he should express any disappointment when a pension is not granted or, if granted, is not as liberal as the disability seemed to warrant. These factors, not being material for your consideration, need not be discussed further here.

Your duties are wholly scientific and judicial, and the judicial responsibility is strictly limited by the scientific. You are called upon to give the bureau an estimate of the degree of the claimant's disability from one or more causes and to describe each of the factors of the alleged disability. To do this requires a standard of disability with which to compare disabilities of every description. Consequently you are called upon sometimes to make ridiculous comparisons that are about as easy as to measure the mentality of an ass by the agility of a monkey. It has always seemed to me that the one standard of disability, ankylosis of the wrist or ankle, is not sufficient and that a double standard is needed which will measure more intelligently the whole range of human ills considered as bases of claims for pensions; for mental conditions such as positively disqualify for adopted vocations certainly cannot, under the system now in use, be intelligibly rated as they need to be in many cases in order to render justice in all. But your single standard disability has the one necessary quality: it is fixed and cannot be over-estimated nor under-estimated. It is a physical standard, not intellectual or sentimental. It is not one by which pain, distress, grief, grievance, desert, need, poverty, moral character, social worth or political importance can be measured. It is strictly a standard of physical disability to perform labor or to use the body for its proper functions; and I think it may be proper to remark here that it ought to be considered a high standard; for to the man who is dependent upon his own manual labor for his living the consequences of a complete ankylosis of the wrist or ankle are a very serious matter. I think the standard disability should be considered as being in the case of such a man; for to other men in other vocations not requiring the agility of a manual laborer the standard disability would not be such a misfortune.

I have named some of the things you cannot measure by this standard. Except for mental disability I doubt the propriety of attempting to measure any of these things. It is certainly not proper to allow any such considerations as distress of a sentimental character, grief over the misfortune, grievance on account of neglected responsibilities of others, desert on account of length or excellence of services rendered the government, need of relief of any kind, poverty, good or bad moral character, social standing or political or business influence of any kind. These things should have no place in your mind. The questions with which you deal in every case are purely technical and you should consider them without any regard for the political or business consequences of your report. The government protects you in your actions as a board, so that you may be expected to act without fear or favor.

It would seem that this is so plain as not to need mention here, but you will, probably each of you, bear me out in the assertion that there are few, if any, boards that have not been vexed by the insistence of the politician and

embarrassed by the inducements to business or professional advantage. I have seen instances of this so glaring that I have frequently felt called upon to report in my summaries of cases the facts about the board's official conduct, of course mentioning the surgeon referred to by name. When you assemble as a board you are a body of scientists officially employed and whatever appears to bias your judgment should be promptly cut out and an antiseptic dressing of judicial dignity applied.

Next to the unpardonable sin of incapability there is no greater hindrance to proper conclusions than the fact that politics or business, or both of them, will always be seeking to influence you in your actions if not in your opinions. So I repeat, cut it out.

Aside from these influences personal friendship and personal information, if they exist, are factors in your judgment which should be guarded. They are too likely to result in bias and are seldom helpful. All personal knowledge gained outside the examination room should be given to your colleagues as such and the facts, if important or material, should be made to appear, together with the means of knowledge, in your report. One of the most embarrassing duties I have to perform in the special examination of a case is to go to a member of the board for a deposition explaining an affidavit made after an examination and stating alleged facts of which he had knowledge before the examination, the two conflicting in important respects. Remember this: You can forget, but the pension office cannot.

Your first duty is to be scientifically accurate. Now it is as impossible for a man to be scientific outside his proper sphere as it is for a fish to give an exhibition of swimming when it is out of the water. Unfortunately for the rest of us, but luckily for the doctor, it is a very difficult matter to learn from his face whether he is confidently wise or actually befuddled. So, if in pension matters you cannot be strictly scientific, do call up that saving grace of a wise look and improve a little on the conduct of the fish. If you cannot resist the temptation to favor a friend, to relieve the needy and suffering, to reward the worthy, to punish the wicked or to gain an advantage for yourself,—all worthy motives elsewhere than in the expression of a scientific opinion, but wholly unworthy in an examining surgeon in his official duties,—do yourself at least the justice not to let him or the world know your weakness; then, I suggest, resign for good business reasons in favor of the fellow who is more devoted to science in the abstract and to his country in an ambition to serve it.

And now between Scylla, impracticable and barren of any suggestion, and Charybdis, ridiculous from presumption, I want to try to steer a few remarks about some things which I think the average board does not treat scientifically.

One of these is rheumatism. I often wish that, if there is anybody who knows what rheumatism is and what are its legitimate causes and what things called rheumatism are not entitled to so dignified a name, the pension bureau might be enlightened on that subject. I have not heard that any man yet knows; but I have heard and also observed that "Was man nicht definieren kann, das sieht man als rheumatismus an." In other words it is an unlimited group of symptoms of ache, pain, soreness, stiffness, swelling, sensitiveness,

and limitation of motion, resulting from various acts of indiscretion both moral and physical, grouped together for want of ability to classify and named by a single term that embraces everything from the skin inward. In cases where it is alleged, the pension bureau is entitled to a scientific opinion as to whether its cause is legitimate. In mining and mountain regions, in certain climates, and in certain occupations there are at least ten chances to one that it is not of service origin; and I am convinced from my own observations that it is often due to vicious habits the evidences of which do not appear objectively. A careful, critical and sometimes merciless questioning and cross-questioning of the claimant is warranted in every case. If the board can enlighten the bureau as to the probable cause it will be of the greatest value to the government to have a judicious opinion. This is a disability the origin of which cannot be determined many times even on special examination, and it is only a small percentage of pension claims that are ever investigated in the field.

Malarial poisoning has become a favorite allegation as a basis for pension claims. This is another nondescript. In the diagnosis of alleged malarial poisoning it is my opinion that the boards have never rendered the government any valuable service. Given, an allegation of malarial poisoning and a broken-down victim of his own indiscretions, whether he ever had malaria or not, or if he did, whether the wreckage is the result of the few "chills" on record or otherwise, the average board goes to work something like this:—

"Slight epigastric tenderness; liver somewhat enlarged and extends below the 'steenth rib; tongue coated (may be from tobacco juice or last week's booze); splenic dullness about so; alleges occasional constipation and diarrhoea; rectum normal; rate for malaria, 8-18."

Now what would you do in such a case if the claimant told you truthfully that he never had "chills and fever" in his life so far as he knew? In 90 per cent. of the cases you do not know whether or not the man ever had malaria. In those cases what warrant have you for grouping these facts together and dubbing them malarial poisoning? Suppose you doubt the claimant's veracity when he makes his allegation of malaria, which you have a right to do so long as the group and its causes are not possible of definite diagnosis without any established history; then suppose that you have learned by a careful questioning of the claimant that he is addicted to the use of intoxicants, especially beer, and that he is irregular in his habits, that he is a gluttonous eater, and guilty of various other hygienic indiscretions; would you still group these same facts under any single head, and if so, would you still dub it "malarial poisoning?" I believe that I am here pointing out one single allegation, supported by the opinions of surgeons who are taking the history of the case for granted, that has cost the government many millions of dollars in cases where no pension whatever should have been granted, and where no pension would have been granted if the boards had done their duty scientifically.

When before the board the claimant is not under oath and he may reasonably be expected to impose upon the credulity that he knows even a scientist may have. Any numb-skull can relate a tale of "chills and fever" and make it fairly plausible; but you are under no constraint to make your opinions

harmonize with his story. It is sometimes scientific to say in your report: "We are unable to say whether or not these conditions are the results of malaria." But I have never yet seen or heard of the board that was frank enough to admit that it did not have a positive opinion, nor do I recall any case wherein the report stated the evident truth that "These conditions are probably the results of claimant's manner of living."

Another important disability in pension claimants, one that is never alleged, is hypochondria. Whether this is regarded as a disability or a factor in any disability, and whether it is a condition for which the government should be held responsible, is a large question which it is my purpose only to raise and not to discuss. I see it so often manifested in pension claimants, especially those who have long contemplated a claim for pension, that I think it is important enough as a disability or a factor important enough to receive the attention of the board whenever it can be defined in the case before it.

Pension claimants have years ago learned the importance of making complaints in a public manner, even going to the length of exhibiting physical signs of the alleged fact of their disability. The actual disability may even be wanting, at the beginning, but years of contemplation of the possibilities of a pension, and years of complaining for the purpose of creating valuable evidence, and years of feigning and hobbling and stooping and straining finally have their real effect; and this effect becomes no less real than it is finally alleged. Cases of this kind have been so numerous and so well defined that it has seemed to me they should sometimes be made to appear in your reports. I have never seen them in any report, but I have seen many cases in which the board had certain warrant for discussing the question in its report.

As a final suggestion, too many reports of boards are not comprehensive. Too often the report is limited to the particular disability or disabilities alleged. I think the report should show the claimant's physical condition in every respect, and that greater detail of statement would be of immense value to the government in many cases and to the claimant in many others. At present it seems to be expected of a board that it write its report in a few suggestive words or, at most, laconic sentences concerning each alleged disability, and that it stop there. That may be about as much as the government pays for, but, if so, it does not pay for enough. A fuller statement will show two things: First, an unmistakable condition which the bureau is to rate; and, second, that the board has actually given more than superficial thought to its work.

The importance of the board's services in aiding the bureau to arrive at a correct ground for final action is so great, and the impossibility of obtaining accurate scientific information and competent opinion from men who are inexperienced and incompetent, and who may only a few times a year have any occasion to consider a pension case, is so evident that, as it seems to me, every person who handles pension claims must admit at once the correctness of this proposition:—

"That only the best obtainable skill should be employed in pension boards," and this:—

"That the great number of boards now existing with very little labor to

perform, and consequently little reward for skilled and busy physicians, is not capable of as great proficiency as the importance of their work demands."

For myself I believe that the service will be greatly improved by reducing the number of boards at least one-third in the very near future, and, following this reduction, I hope soon to see a policy once badly abused again restored in ordering certain classes of pensioners re-examined at stated periods for the purpose of determining the question of the continuance of the disability in the degree at which it was last rated.

Your action in these matters would no doubt have a helpful influence with the Commissioner. His authority is sufficient and I cannot see how he can regard your suggestion as other than most respectful.

RATIONAL TREATMENT OF HYPERTENSION AND SCLEROSIS OF THE ARTERIAL SYSTEM.

By CURRAN POPE, M.D.
LOUISVILLE, KY.

(Continued from January issue.)

THE fluoroscopic screen will enable an enlarged heart to be mapped out far better than by percussion, and I wish here to admit that, as far as I am concerned, I have found it very difficult to map out the increased area, particularly where the lungs overlap, although it is easy between their borders. Kroenig⁵ describes a "step-like line," which allows of determining fairly well the right side, which is an advantage.

A pulse-rate slower while standing than in the recumbent position should lead one to suspect arterial disease, as should a trace of albumin in the urine. Probably no more certain diagnostic agent can be found in this disease than the sphygmomanometer, a useful clinical instrument, possessing great practical utility. With increasing experience, one learns to differentiate and to depend upon its reading, in fact, no practical physician to-day should be without this instrument.

Treatment can do much, especially, for those who have not inherited bad arteries. Hypertension can be cured, but sclerosis, from the very nature of the affection, cannot, though it is amenable to many measures that check its progress and prevent disagreeable consequences. Explain to your patient what the diagnosis means, tell him frankly the time has come when the engine cannot work at high speed and pressure, that the price of comfort and life can only be purchased by obedience to medical supervision and by careful conscientious living. Many will accept this in the spirit in which it is given, others will rebel and refuse the advice; others will not obey, and thus the outcome of your therapeutics depends frequently upon the kind and character of individual with whom you are dealing. *These cases must realize that they are to remain under the general supervision of the physician the rest of their lives.* Their life must be quiet and regulated, avoiding sudden exer-

tions of all kinds. They must learn to put the band brake upon overwork, haste and unrest. Sufficient occupation to prevent fretting and worrying; it should be constantly borne in mind that mental and nervous excitement, especially emotional disturbances, react on the heart and blood-vessels, causing vascular tension, and for that reason strong and repeated emotions may increase the lesions. Get him as interested in keeping himself well as he is in the success of his business, cutting down hours of labor, increasing those of rest and recreation. Short vacations are very valuable and should be taken, especially by those who are likely to acquire this disease; this applies strongly to physicians, financiers and politicians. Dress warmly at all seasons of the year, for a warm skin means that there is more blood in it than when cold. Watch and overcome constipation. Remember that it is the duty of the physician to frequently examine the patient. Diet is most important. *The keynote is to maintain general nutrition.* "Cut out," at once, all alcohol, tobacco, coffee and probably tea. Reduce meats to a minimum, and where these are allowed, give preference to eggs, fish and fowl. Never eat until hungry, then eat a small meal, slowly, masticating carefully, consuming no fluid, thus preventing, as much as possible, hyperæmia of the splanchnic vessels with increased action of the heart, obesity, etc. Practical experience has taught me that a non-proteid, or a low proteid diet is unquestionably the best, for adults can perform most of their work on carbohydrates. It should be remembered that proteids (meats) carry into the body germs, are good germ media, and that they putrefy easily in the intestinal canal. Where meats are allowed, watch the urine for indican and if this appears, shut out meats altogether. The best diet consists of milk, buttermilk, fresh and stewed fruits with little sugar, practically all vegetables, cereals, a moderate amount of fats, preferably vegetable, breads, both stale and dry.

Massage and vibration have the distinct advantage of dilating the peripheral blood-vessels, lowering blood-pressure, favoring tissue metamorphosis, destruction of toxins and renal elimination. It should be applied especially to the spinal region, for two or three inches on either side of the spinal column, and should be heavy enough to convey deep percussion to the tissues below. Abdominal kneading, where it is not too severe or long continued, decidedly reduces blood-pressure.

Light can be employed with advantage in these cases, either as the incandescent electric light bath,⁶ or using the 500-candle power single light. These relax the peripheral tissues, especially the arterial capillaries, promote perspiration and in this way force elimination from all the emunctories by lowering blood-pressure, lifting the load from the heart and kidney, displacing the blood from the interior to the skin surface.

Climate has no influence other than making the patients more comfortable, and enabling them to exercise; a dry, inland climate of moderate elevation, that is bright, sunny and genial in winter, is decidedly the best. These cases must avoid altitudes of 3000 feet or over; 5000 to 7000 feet are dangerous and may cause heart failure, apoplexy, etc.

Exercise is very important, but we should caution against violent or

sudden exertion or exercising too long at any one time, so that fatigue is felt for some time thereafter. The strenuous exerciser must be restrained, the lazy individual, encouraged to do muscular work. Moderate exercise to the point of fatigue, in the fresh air, gauged to the point of producing an agreeable warmth on the surface and slight perspiration, will be found all that is necessary. Walking in park or country on the level; sedate bicycling or horseback riding, may be allowed to almost all cases. The exercise, however, that I believe to be ideal, combining, as it does, all the beneficial features and pleasures of exercise, is to be found in the game of golf. While this is principally walking, there is enough respiratory and trunk exercise to make it of all around advantage. This muscular work means again, the dilatation of the surface blood-vessels with the lowering of tension, a lessening of work upon the heart. In the far gone cases, gentle breathing exercises or gentle resistance movements that are slow and steady, and which have been found useful for cardiac cases, may be employed. These I have described elsewhere.⁶

Electricity will be found of considerable value, but it must be borne in mind that, as generally applied, it is valueless. I am fond of using two methods, the high frequency current of auto-condensation and auto-conduction, and the static wave-current. The latter current, the static, does not possess, in my opinion, anything like the power of the high frequency, in the permanency of its effects. The patient, when treated by a high frequency current, is thrown into a field of high potential stress, which is a very active agent in increasing cellular changes, the frequency and amplitude of respiration, the amount of oxygen taken in, and carbon dioxide exhaled; the oxyhæmoglobin and its chemical affinity is enhanced; the quantity of urine is increased, as well as the elimination of the phosphates, chlorides, sulphates, urea, uric acid and total nitrogen. Its acidity is markedly diminished. These applications eliminate the toxic substances and by their own peculiar action diminish arterial tension, showing their effects immediately after. They are real prophylactic agents in hypertension against sclerosis. The dosage which, in my opinion, must be carefully measured by the hot wire meter, should range between 300 and 400 milliamperes, with a duration of from ten to twenty minutes. I deem perspiration while taking the treatment an excellent sign of the good results obtained. It may be noted here that exercise and other physio-therapeutic treatments all produce reasonable perspiration. Auto-conduction has the advantage of not causing a preliminary rise of blood-pressure, while auto-condensation does. It should be borne in mind that as effluviation of the abdomen causes splanchnic stimulation and raises blood-pressure it must be avoided.

Where the nutrition is poor and the functional activity of the organs of the abdomen are below par, the static wave-current to the epigastrium will be most useful. Its surging, oscillating, and vibrating character relieves capillary stasis; brings the blood to the surface, gives tissue gymnastics, increases metabolism; forces elimination, relaxes non-striated muscular tissue, gives smooth rhythmic slow movements, and is usually followed by

tone and invigoration. It may be stated that the *galvanic, faradic and sinusoidal currents possess no value* in this disease. I have found the combination of incandescent light baths, ozone and high frequency currents the most powerful method for prompt reduction.

Hydrotherapy is very useful. In the very early stages, we may commence cautiously, by administering the full dry pack, followed by a rapid cold sponge, care being taken to keep the head cool. As soon as we have tested the reaction of the patient we may administer the electric light bath until perspiration takes place, followed by the horizontal rain bath at 100° to 105° F. for one and one-half minutes, reduced at first to 80° F. for one-fourth minute; pressure twenty pounds. Cautiously reduce the temperature one degree daily, studying the reactive capacity of the patient. Huchard says that he has found the low-pressure neutral jet douche at 92° to 96° F., applied to either side of the spinal column for three to eight minutes, a powerful nerve sedative and circulatory help. He gradually passes to the neutral horizontal rain or circular needle bath for one to two minutes, gradually reduced to the point of pleasant coolness, this to be regulated by the patient. I can unquestionably substantiate his experience and statement that "heart diseases and other pathologic conditions of heart weakness are very often dependent not only upon the heart itself and its innervation, but also upon peripheral innervation, and that when sedation occurs the general disturbance improves or ceases." Hirschfeld believes that where it can be borne the hot full bath is an excellent home method; the skin becomes more vascular, relieving the internal organs, lifting the load of the heart, relieving insomnia, increasing metabolism and oxidation, and eliminating waste materials. In most cases it is best to commence with the carbon dioxide bath, gradually increasing its strength as the patient responds. This method is especially valuable where we have a concomitant cardiac dilatation, as it strengthens the heart muscle.

Regarding the use of baths and gymnastics in arterio-sclerosis, J. Groedel, of Bad-Nauheim, who has given special attention to the treatment of arterio-sclerosis, contends that, although the increased blood-pressure, "considered as the usual consequence of treatment by the Nauheim baths, may, at first sight, seem to indicate that every patient with arterio-sclerosis should be excluded from a treatment by baths, a further increase of the high blood-pressure usually found in arterio-sclerosis must not only surcharge the heart more than is already the case, but also create the danger of the bursting of a cerebral aneurism, so often present in cases of arterio-sclerosis." He has by numerous observations become convinced, however, that baths can be prescribed for these patients "in such a manner that the increase of blood-pressure does not take place, or only in a very slight degree." If the temperature be kept almost at the point of "indifference"—that is, about 92° to 93° F. (33.2° to 33.8° C.)—the primary acute increase of blood-pressure caused by the contraction of the cutaneous vessels, and most to be feared, will be very slight, and if there be carbonic acid in the bath, it will, at the same time, quickly disappear. If the skin of the patient be cooled somewhat

by moistening the parts particularly sensitive to cold before entering the bath, the avoidance of that primary increase of blood-pressure, or, indeed, any shock whatever, will be the more certain. A similarly good effect is produced, when the patient is only allowed to take half baths, and the exposed parts of the body are wrapped up, so as to prevent cooling. In most cases, the amount of water can be increased little by little at each bath until a full bath is at length attained, but even then it is advisable to let the patient only submerge his body by degrees. Placing cold bandages on the bather's head is often indicated. By proceeding cautiously in this manner he has never had an unfortunate case in the course of a practice of twenty-two years in Nauheim.

Under what conditions is a course of baths indicated or beneficial in cases of arterio-sclerosis? It is mainly indicated for diseases based on the same etiological principle as arterio-sclerosis itself, or such as usually lead to it. By combating these we can at the same time retard the progress of the sclerotic process in the vessels.⁶

I am satisfied *drugs* are of some value, especially the iodine preparations, the iodids of potassium, sodium and strontium, given in very small doses, not because we believe the trouble is syphilitic, but because of their eliminative effect, rendering the blood more fluid, acting favorably upon nervous symptoms, lowering blood-pressure and allowing nature to do its work. It should be given for long periods interrupted every few weeks, always after meals, well diluted, best in combination with the bicarbonate of soda or potash.

I have found thyroid in small doses to be very useful in preventing the progress of the trouble, its action being that of an antagonist to high blood-pressure.

Every case should have from time to time, two to four weeks, a course of mercurials, my preference being for blue mass over all the other forms. Some writers attempt to dissolve the lime salts with lactic acid preparations, largely strontium lactate; I believe that the effect of lactic acid can best be obtained by the use of soured milk or buttermilk or lacto-bacillary tablets. I have never been able to satisfy myself that lime salts had been dissolved out of the blood-vessels, but the main advantage in this medication is, in my opinion, the stopping of intestinal putrefaction. Where tonics are needed, iron, arsenic and malt fill the bill. The nitrites and nitroglycerin should be reserved for emergencies and in my opinion rarely used otherwise. For continuous use, Vaquez⁷ recommends sweet spirits of niter, drams one to two, diluted with water.

Where we have high tension, with failing cardiac compensation, I have found spartein, blue mass and vascular dilators useful.

When should we reduce blood-pressure, and how much? I know of nothing that requires more careful individualizing. I believe that the keynote to the situation is the cardiac condition. Where we have compensatory hypertrophy, it must be remembered that this is a physiological development to meet the increased demand and great care should be exercised. The

problem is to partially reduce the pressure to within reasonable limits, but never attempt to make it approach the supposed normal. Our object should be to simply keep the pressure down so as to prevent the serious and dangerous complications and sequelæ that might arise. *I am radically opposed to the prolonged use of any drug to lower blood pressure. This must be obtained by non-medicinal measures.*

These patients should return, as I said before, to the physician for frequent examination and for short courses of treatment. This ideal is rarely attained, and we do not, as a rule see patients again until some symptom has arisen that demands intervention; thus it is that we are frequently prevented from doing the most that lies within our power, and the patient's demise is thus hastened. It is so hard for us all to realize the need of the proverbial stitch in time.

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Cyclopædia of Current literature

ALCOHOL, THERAPEUTIC VALUE OF.

In healthy persons alcohol unquestionably plays the same rôle as a food, *e.g.*, a carbohydrate or a fat. In contrast to fats and carbohydrates alcohol spares the proteids, only in those cases in which the organism has become accustomed to the action of the stimulant, which usually takes several days. In disease alcohol apparently acts upon metabolism in the same way as in health. It is particularly useful as a food in diabetes mellitus. By taking the place of fats in the food it lessens the production of the acetone bodies. The author also cites the work of Hare, Friedberger and Mircoli. Hare showed that alcohol raises the power of the blood to destroy bacteria. Friedberger found that under the influence of alcohol the blood acquired an increased resistance against the cholera vibrio. Mircoli found that under the influence of alcohol the body acquired the power to

resist the tubercle bacillus. A. K. Sievert (Roussky Vrach, October 24, 1909; New York Medical Journal, January 1, 1910).

BILIARY FISTULAS, THERAPEUTIC POSSIBILITIES OF.

The writer has found that the irrigation, with normal salt solution at a rate of about six drops per second and elevation of about a foot, of biliary fistulæ, after drainage of the gall-bladder for the relief of cholecystitis, cholelithiasis or cholangitis, promptly induces active secretion of urine, dissipates chronic jaundice more quickly than does simple drainage and often causes persistent post-operative biliary vomiting to subside. He does not claim that this procedure can be used in every case or that it should supplant other recognized methods, but that it has its distinct value in suitable cases, particularly since nowhere in the

alimentary tract is absorption so active or so normal as in this particular region. L. L. McArthur (*Journal American Medical Association*, January 1, 1910).

BRONCHITIS, CHRONIC, TREATMENT OF.

In chronic bronchitis, before the advent of emphysema or asthma or dilated heart, the writer used internally the iodides, especially potassium iodide, with syrup of hydriodic acid. In dyspnoea, even slight, or nervous irritability shown in any way, the iodide should be combined with Hoffmann's anodyne. Hydriodic acid may be alternated advantageously with terpin hydrate in fairly large doses. Invariably counter-irritation to the chest should be insisted upon, and kept up for many days, or weeks, with occasional intermissions when the skin becomes tender. Nothing equals the compound tincture of iodine for its resolutive qualities, and the derivative effect toward the skin in all that is desirable. The author is opposed to the use of sedatives or anodynes, unless imperatively required. The least objectionable are the combined bromides, henbane, or codeine. A mercurial, followed by Rochelle or Epsom salt, is useful once a week or oftener, and diminishes cough and expectoration for a time in a pronounced degree. Vapor inhalations, especially of creosote, are very valuable when properly used, and if persisted in are more curative than any other one thing, unless it is change of climate and, at times, habits and occupation. The inhalations should be used with the perforated zinc inhaler; equal parts of creosote, alcohol, and spirit of chloroform is unequalled. Internally, creosote may also be given with the happiest effects, in small repeated doses, and, combined with the best whiskey and glycerine, will rarely disagree with the patient. The

patients cannot, should not, be housed. If so, they soon get worse, and their bronchial mucous membrane will not bear the slightest change without increased cough and expectoration. If a change of climate may be indulged in, one should go, preferably, to the sand hills of Georgia in winter, and in summer to the Adirondacks, at a moderate elevation. If permanent banishment seems desirable, California, not too near the coast, is the one place of best resort. Beverly Robinson (*American Journal Medical Sciences*, December, 1909).

CHOREA, LATENT.

The author holds that (rheumatic) chorea declares itself first by symptoms significant of general nervous instability. He urges that in dealing with children suffering from nervous disorders of many kinds special care should be taken to exclude the possibility of their having originated from a slight rheumatic infection. The well-known association between rheumatism and nervous instability is not to be explained by considering that the infection is specially prone to attack neurotic children, but by regarding the nervousness as in most cases the outcome of an infection already present (latent chorea). The mental depression and headache in rheumatic children are usually to be attributed to the disease and not to its treatment by salicylates. The recognition of latent chorea in children suffering from obvious acute rheumatism affords strong evidence that chorea is a rheumatic condition. R. Miller (*Lancet*, December 18, 1909).

DELIRIUM TREMENS, VERONAL IN TREATMENT OF.

The writer reports the result of five years' use of veronal in delirium tremens. His method of administration is as fol-

lows: An initial dose of 1 gram is given in all incipient cases. If sleep does not follow within three hours, another gram is given. Sleep then follows and lasts six to eight hours, or even twelve. On waking the patient is clear, quiet and feels well. If there is yet some tremor, 0.5 gram of veronal is given, and by evening all tremor has, as a rule, disappeared. If the patient remains in the hospital some time longer for other reasons, 0.5 gram is given every evening to insure against sleeplessness. If the delirium is not controlled with the 2 grams as given above, another gram may be given five to six hours after the second dose. Only 3 patients have failed to respond to this treatment out of a total of 100. There were 2 deaths from double pneumonia. In all the author's experience he has only seen one case of veronal rash, and absolutely no other symptom of veronal poisoning. V. F. Möller (*Berliner klinische Wochenschrift*, December 27, 1909; *Boston Medical and Surgical Journal*, January 20, 1910).

ECLAMPSIA AND THE WEATHER.

Damp, bleak weather and the sultry and humid weather seem to have an influence on the incidence of eclampsia, as the writer shows by tables of the 262 cases of eclampsia at the Berlin Charité in the last four years compared with the weather charts. The cases in which the women present symptoms suggestive of toxæmia but without actual eclampsia should be taken into account in a study of the connection between meteorologic conditions and eclampsia. R. Schlichting (*Archiv. für Gynækologie*, Bd. lxxxix, Nu. 2, 1910; *Journal American Medical Association*, January 22, 1910).

EPILEPSY, DIET IN.

A reduction in the number of seizures by about 14 per cent. was obtained by the

author, apparently attributable to a simple diminution of the daily allowance of the proteids and to nothing else. This diet consisted of three meals a day at the usual hours, each meal consisting of 125 grams of bread, 16 grams of butter, and 250 cubic centimeters of milk, carefully weighed and measured. By calculation this diet contains approximately 52.2 grams of proteids, 70.3 grams of fats, and 220.0 grams of carbohydrates daily. A. J. Rosanoff (*Journal of Nervous and Mental Diseases*, December, 1909).

GALL-STONES, DIFFERENTIAL DIAGNOSIS OF.

In gall-stones the general health does not suffer until complications are present. The course of ulcer is prolonged and fluctuating; in cancer it is short and steadily downward. Pain in gall-stones is irregular in time, of sudden onset, and of severe but short duration, abrupt cessation, radiates to right arch and back and is independent of food. In ulcer, pain is usually clear cut, in spells, regular in time, and eased by food to reappear in from two to four hours. In cancer, the pain is continuous, dull, depressing and not only is not controlled by food, etc., but is immediately increased by it. In gall-stones the vomiting is less a factor in diagnosis. In ulcer it is as regular as is pain. It is irregular in cancer. In gall-stones gas is troublesome only at the time of the colic. In ulcer it is a symptom at a time when other symptoms are present and is controlled in the same manner as the other symptoms are controlled. In cancer, gas is continuous and increased in amount, with periods of great increase usually soon following the ingestion of food. Blood is rare in gall-stones; in ulcer quite rare; in cancer common. In gall-stones the patient is normal physically,

save when there are late complications with pancreatic disturbance. In ulcer, the patient is hopeful and active; in cancer, depressed, languid, weakened, discouraged, pale, and, perhaps, cachectic. Diagnosis of gall-stones is made with considerable satisfaction; that of peptic ulcer is, perhaps, less clearly defined. Diagnosis of cancer of the stomach is extremely difficult to make in that early stage when surgery, the only means of relief, offers a hope of cure, and when delay is fatal. Though late in his diagnosis, either because of insuperable circumstances, lack of knowledge or unpardonable neglect, the internist has met his responsibility, at least in a small measure, when he places his patient with gall-stones, ulcer, or suspected gastric cancer in the hands of a competent surgeon. The surgeon's responsibility, however, does not cease with exploration or gastro-enterostomy alone, because careful resection is necessary in cancer or any suspicious ulcerous lesions. C. Graham (Pennsylvania Medical Journal, November, 1909).

INCONTINENCE OF URINE FOLLOWING LABOR.

Incontinence of urine which comes on immediately after labor due to swelling, etc., of the urethra and bladder neck, as a rule soon subsides without treatment. Later a careful examination should be made of all the pelvic organs, replacing a retroposed uterus when necessary, hastening involution of the pelvic structure by douches, tampons, pessaries, etc. In persistent or increasing incontinence some operative procedure is usually necessary. The nature of the operation should depend upon the condition of the urethra and bladder neck. The Frank operation, combined with an anterior and

posterior colporrhaphy in cases where there is a relaxed and gaping vagina, and some appropriate operation for retroversion where this exists, will cure the average case of incontinence coming on after labor, and of not too long standing. In cases where there is a marked dilatation of the urethra and of long standing or cases where from necrosis the muscular wall of the neck of the bladder and urethra are wanting, Gersuny's operation seems to offer the best hope of cure. Pawlik's and Dudley's operations have likewise given good results at the hands of their originators. G. Brown Miller (Surgery, Gynecology and Obstetrics, January, 1910).

MERCURY IN TUBERCULOSIS.

In eight cases of tuberculosis in which the author has used succinimid of mercury there has been improvement in the general condition, evinced by increase in weight, normalizing of temperature and diminution of cough, expectoration, and night sweats. The destructive action of the mercury on the tubercle bacilli in two cases was strikingly apparent. Percussion and auscultation uniformly reflect the general improvement. The writer believes that the inevitable conclusion to be drawn from such cases as those must be that, in succinimid of mercury, hypodermically administered, we have an efficient means of arresting tuberculous degeneration and of improving in a most striking manner the general condition of the patient. The only question which appears to remain for test is whether we may not have here a specific remedy for the disease in all stages at which the tissues are not yet so broken down and disorganized that re-establishment is a physical impossibility. H. Freeman (New York Medical Journal, December 25, 1909).

OLIVE OIL AND POSTANÆSTHETIC NAUSEA.

Fats and other ether soluble substances, when introduced into the alimentary tract of individuals subjected to ether anæsthesia, are capable of restoring to the blood certain properties which are inhibited by the action of the drug, viz.: those concerned with the phenomena of phagocytosis. With the idea in mind that other effects of ether, such as nausea and vomiting—whether these be due to a local irritating action of the drug on the gastric mucosa or to a more general action elsewhere—might also be influenced by the introduction of a fat, such as olive oil, into the stomach, a series of cases were given olive oil by mouth immediately after partial restoration of consciousness following an ether anæsthesia. Up to this time thirty patients in all have been treated in this manner. The results have been striking. In certain of the cases nausea failed to occur at any time. In a second group in which nausea had begun prior to the administration of the oil it was immediately checked by this treatment. In only one of the thirty patients was nausea observed after giving the oil. E. A. Graham (*Journal American Medical Association*, December 18, 1909).

OPIUM, SOME USES OF.

It is often forgotten that opium has stimulating as well as sedative properties, and that as a general stimulant to the nerves, the brain, and all the organs of life its value even for this quality alone entitles it to a high place in the esteem of the practical physician. Opium and morphine are not quite the same in this respect. Of the two it is in the former that the quality is most active. Its stimulating effect is best brought about by the use of small doses given at convenient

intervals. The invigorating influence can be turned to account in the case of obstinate sores occurring in cachectic children. The ulcerative stomatitis which is so common among the ill-fed and badly-nourished children of the very poor often shows little disposition to heal, even when treatment is reinforced by a generous diet and healthy surrounding. When repair is thus at a standstill, a few drops (two to five) of laudanum given twice a day quickly induce a welcome change in the local conditions, and start an improvement which goes on smoothly to a cure.

Opium exerts its influence by means of the nervous system, through which it gives energy to the capillary circulation, and affects to some extent every organ of the body. There can be no doubt that the circulation is stimulated by the remedy. The feet become warmer, and the resistance of the body to the depressing influence of cold is very appreciably enhanced. This primary effect of the drug as a stimulant of the nervous system is a quality the value of which must not be forgotten. The nervous trepidation called "stage fright"—the ill-defined sinking apprehension which is familiar to the orator and the player, and is not unknown to the student as he prepares to face his examiner—may be forestalled and disarmed by a small dose, five or six drops, of laudanum taken half an hour or so before his trial is to begin. Again, the nervous tremblings and depression which may be induced by a shock, and are apt to follow a surgical operation, are amenable to the same influence. Such a dose, repeated, if necessary, several times at intervals of half an hour, is usually soon followed by tranquillity and sleep. The same treatment will go far to relieve the distress of dying persons. Under the influence of a few drops of the tincture the painful uneasiness abates, and is suc-

ceeded by a period of restful calm which may be maintained by judicious repetitions of the remedy until the close.

Again, the profound mental depression which sometimes afflicts elderly people, making their lives a burden to themselves and to their relatives, may be alleviated by the same means. In this, as in the preceding cases, the drug acts as a stimulant, and something more; it quiets nervous irritability, while at the same time it gives a welcome spur to jaded nerves. There are few cases of nervous unrest in which opium given in these moderate, stimulating doses fails to relieve.

Children who have been treated surgically for empyema and wear a drainage tube often suffer much uneasiness while the drainage process is going on. Under this treatment their restlessness is calmed and they are enabled to bear the continued presence of the tube without showing any sign of discomfort. In all forms of illness in which the nervous system is irritable and perturbed the same treatment will be found of service. When thus given with a view to stimulation the dose of the drug must be carefully limited, for too large a quantity would defeat our object; and it must be remembered that the susceptibility of the system to the remedy varies greatly in different cases—in adult life as well as in the child. It is wise, therefore, to begin with a very moderate dose, lest, unwittingly, we produce an effect the very opposite to that which we desire. The dose can be repeated at intervals of half an hour until the end aimed at is achieved.

A fear is often expressed of establishing an "opium habit" if this form of sedative is used for a long time; and to this fear may possibly be ascribed the neglect into which this invaluable drug is beginning to fall. But if proper care is

taken the danger is surely a fanciful one. When the remedy ceases to be required it should be withdrawn as quickly as possible; and with the exercise of care there is little difficulty about leaving it off, even if the drug has been continued for a period of months. The assumed difficulty arises from the extreme irritability of the nervous system which follows the sudden omission of the usual sedative dose. This is sometimes distressing in the extreme, and many a victim to the drug although profoundly anxious to free himself from its thralldom, has shrunk from provoking the suffering which he well knows the struggle for liberty will entail. This suffering may be avoided if the dose is gradually reduced until the quantity taken is very small. If then it is withheld altogether, the nervous unrest which ensues is moderate enough to be readily controllable by a few doses of tincture of gelsemium. Eustase Smith (*British Medical Journal*, December 4, 1909).

OSTEOMALACIA, ADRENALIN IN TREATMENT OF.

Case of non-puerperal osteomalacia in a woman of 36. The first symptoms had been observed at the age of 16 after a nervous shock and were ascribed to a nervous origin until the girl became quite crippled with several spontaneous fractures. Immobilization for a year and a half induced some improvement, but two years later nervous stress and overwork were followed by recurrence and exaggeration of the symptoms of osteomalacia. After two years in bed and failure of all other measures, suprarenal extract was given according to Bossi's technique. By the thirtieth injection great improvement was manifest and in time the entire syndrome was arrested, the bones were apparently restored to approximately nor-

mal, all pains ceased and almost complete functional capacity was restored. From eight to ten injections were made each month, in single doses of 1 cubic centimeter. Not a trace of injury from the suprarenal treatment has been discovered in this case. The author is inclined to ascribe its effect to an influence arresting the decalcification of the bones which he regards as the essential process in osteomalacia, both this and rachitis representing practically the same process, differing only in the age at which it occurs. L. Bernard (*Presse médicale*, November 20, 1909; *Journal American Medical Association*, January 8, 1910).

PITUITARY EXTRACT IN PROPHYLAXIS OF POST-OPERATIVE SHOCK.

In three cases the writer injected 1 cubic centimeter of a 20-per-cent. solution of the posterior lobe of the pituitary body intramuscularly into the patient's arm before the patient had fully recovered from the anæsthetic. The effect was almost immediate, and the almost imperceptible pulse soon became large and bounding. This effect lasted from 12 to 16 hours, and gradually passed off. Not only did the pulse become larger in expansion, but it was also slowed, and whereas it had been irregular it became regular. This effect seems due not only to the action of the drug on the blood-vessels, but also on the heart. The injection was given in conjunction with normal saline by rectum. G. G. Wray (*British Medical Journal*, December 18, 1909).

PULMONARY TUBERCULOSIS, INCIPIENT, TREATMENT OF.

During the last four years, the author has treated all his cases of early pulmonary tuberculosis by inhalation of antiseptics with remarkable results. The in-

haler employed has been the simple oronasal cage of perforated zinc advocated by Yeo. It is worn over the nose and mouth and is kept in place by elastic bands behind the ears; it contains a piece of sponge or felt on which the solution is dropped. The only precaution necessary is to take care that the edges of the inhaler which rest on the skin are not wetted, lest the skin should be stained or made sore. The antiseptic solution employed has been:—

	gm. or c.c.
R Acidi carbolici	8 5ij.
Creosoti	8 3ij.
Tinct. iodi	4 or 3j.
Spir. ætheris	4 3j.
Spir. chloroformi	8 5ij.

Of this solution, 6 to 8 drops are poured on the felt of the inhaler every hour during the daytime, and two or three times during the night, if the patient is awake. The odor of the solution is not unpleasant, and patients appear to derive great benefit from its use. Cough is readily relieved without any sedative or expectorant medicines, and sputum, if any, is more easily expectorated, and is lessened in quantity. The use of this solution has no irritating tendency, nor does it cause hæmoptysis. If hæmorrhage should occur, it might be well to remember Yeo's suggestion and add turpentine to the solution.

The absolutely continuous use of the inhaler (except at meal-time) must be rigidly required, and it is very desirable to keep the patient at rest in bed for a week at least, the windows of his bedroom being widely open. During the second week he may be allowed to rise for an hour or two daily, but the continuous use of the inhaler is essential. When the temperature is normal, after the first ten days or so, he may be allowed to omit the inhaler for an hour every

morning and take a walk in the open air. Gradually the periods of exercise may be increased and the number of hours during which the inhaler is used may be very gradually diminished. D. B. Lees (*British Medical Journal*, December 11, 1909).

QUININ AND CANCER.

Epithelioma has been treated by the writer with local application of quinin stirred with water to a paste and applied with a cotton wad in a number of cases in which operation was refused. In every instance the quinin had a caustic action on the growth, eating it out until the ulceration was three times or more the size and depth as at first. He renewed the quinin every second day for four times. The lesion then began to heal over with a simple iodoform dressing, and by the twentieth day had entirely healed. This experience has been repeated too many times, he asserts, for it to be a mere coincidence; the quinin applications are continued until the lesion ceases to spread under its influence. They are also useful, he believes, in palliative treatment of inoperable uterine cancer. The quinin also serves to differentiate cancer from ordinary erosions; with the latter there is none of the destructive action observed with cancer. He advises application of quinin as a preliminary to radical operation as it aids in clearing up the diagnosis. F.

Stroné (*Medizinische Klinik*, November 28, 1909; *Journal American Medical Association*, January 15, 1910).

VOMITING OF PREGNANCY AND SUPRARENAL TREATMENT.

Attention is called to the remarkable effect of a few cubic centimeters of a solution of the juice from the capsule of the suprarenals in promptly arresting previously uncontrollable vomiting. The patient was a young woman at the third month of her second pregnancy, dangerously debilitated from the almost incessant vomiting. All other treatment was suspended except the nutrient enemas, and ten drops of a 1 to 1,000 adrenalin solution were given morning and night, at first in an enema of 150 grammes water, with twenty drops of laudanum, after three days, in ice-water, by the mouth. The vomiting ceased by the second day, and by the third, the patient was able to retain a little food. On the eleventh day the dose was reduced to ten drops a day, and this was kept up for nine more days. Toward the end of the pregnancy there was a recurrence of tendency to nausea, and ten drops of the adrenalin solution were given for five days, during which the tendency subsided, and a well-developed child was delivered at term, and is now growing normally. Rebaudi (*Gazzetta degli Ospedali*, Sept. 21, 1909; *Journal American Medical Association*, October 30, 1909).

ANNOUNCEMENT.

"The Chicago Clinic."

Dr. William J. Robinson, editor of the "Critic and Guide," "The American Journal of Urology," and "Therapeutic Medicine," has purchased the "Chicago Clinic," which has had an uninterrupted existence for twenty-three years (though known during the past year under the title of "Practical Therapeutics") and has consolidated it with "Therapeutic Medicine." The consolidated journal will be published monthly and it is expected that under the able editorship of Dr. William J. Robinson it will become one of the strongest and most important publications in America. We wish it every success!

The publication office is located at 12 Mt. Morris Park W., New York.

Book Reviews

DISEASES OF THE NOSE, THROAT AND EAR. By Charles Huntoon Knight, A.M., M.D., Professor of Laryngology in Cornell University Medical College, Surgeon to the Manhattan Eye, Ear and Throat Hospital, and W. Sohler Bryant, A.M., M.D., Consulting Otologist, Manhattan State Hospital. Second Edition, Revised. Octavo of xix + 631 Pages, with 239 Illustrations. Philadelphia: P. Blakiston's Son & Co., 1909. Price, \$4.50, net.

In the second edition of this useful work we find that its scope has been enlarged by the addition of a section on the ear and its diseases, of which Dr. Bryant is the author. The usefulness of the book to practitioners and students is thereby largely increased. In the nose and throat section the most important additions have been made in the chapters on deviated septum and the diseases of the accessory sinuses. Many other minor changes have also been made. Thus brought up to date, the work is an excellent exposition of the subject. It is both highly practical and admirably written. The practitioner will find it of particular value in that it gives not only one or a few methods or measures for the treatment of given conditions, but a large variety of them. Neither is the reader left in doubt as to the relative merits of these measures, the author expressing definite views concerning their value on the basis of his own extensive experience. Especially valuable are the portions on septal deviations, adenoids and hypertrophied tonsils, neoplasms of the larynx and laryngeal tuberculosis. Numerous excellent illustrations of the pathological appearances seen and instruments used are distributed throughout.

The portion on the ear comprises the last 200 pages of the book. The chapter on the anatomy of this region is unusually full and contains numerous illustrations showing the relations of the various structures. The question of phylogenesis and embryology is also entered into. An adequate chapter on physiology is followed by one on general aural pathology, with discussion of the flora and fauna of the ear. Succeeding sections deal with the etiology of ear affections, methods of examination and diagnosis, and the usual morbid conditions of the region. This part of the work is briefer and more synoptic than the corresponding portions on the nose and throat, but on the whole will be found satisfactory. The important subject of mastoid surgery is given due prominence and is well illustrated. The work closes with a useful section on aural therapeutics and a description of the special otological instruments and routine procedures for tympanic inflation, etc. We heartily recommend this book to students and practitioners.—C. E. DE M. S.

A TEXT-BOOK OF MATERIA MEDICA, PHARMACOLOGY AND THERAPEUTICS. By George F. Butler, A.M., Ph.G., M.D., Professor and Head of the Department of Therapeutics and Professor of Preventive and Clinical Medicine, Chicago College of Medicine and Surgery, Medical Department Valparaiso University. Sixth Edition, Revised and Enlarged. Octavo of 708 Pages. Philadelphia and London: W. B. Saunders Company, 1908. Cloth, \$4.00, net; Half-Morocco, \$5.50, net.

This new edition of Dr. Butler's work has been altered to correspond with the Eighth Revision of the U. S. Pharmacopœia. Changes in the classification of certain remedies have also been made in conformity with the modern views concerning their pharmacological effects. As in previous editions, the author's aim has been to produce a thoroughly practical work for both students and practitioners, which end he attains by systematic and logical arrangement of the subject-matter.

The introduction contains, besides the usual definitions and general considerations, a section on the relations between the chemical composition and physiological action of remedies, and a description of the various modes of administration and the untoward effects of drugs, etc. These are followed by an extensive section on pharmacy, in which all the preparations of the Pharmacopœia and of the National Formulary belonging to each pharmaceutical class are enumerated, the composition of each preparation being also mentioned. The author then proceeds with a discussion of the physical characteristics, physiological action, and therapeutics of the various remedies. These he groups mainly according to their distinctive effects, as on the nervous system, on the circulatory organs, etc. Under each remedy are given the definition, general description and properties, dose, official preparations, antagonists, incompatibles, and synergists, followed by a full description of the physiological action and therapeutic uses, the contra-indications and methods of administration. In view of the use of the work by practitioners, special prominence has been given to the portions on therapeutics. Untoward effects and poisoning are summarized under the heading of physiological action. All the official remedies are considered, and in addition certain of the newer non-official remedies which have proven valuable and come into general use. Near the end of the work will be found useful chapters on organotherapy, with serum-therapy, opsonins, and vaccine-therapy, and on prescription-writing. In the

latter special emphasis is laid on incompatibilities and on the proper grammatical construction of prescriptions. The book closes with a full general index and a clinical index.

In brief, Dr. Butler's book contains all the essentials of the subject within a moderate compass. The author has taken unusual pains in discriminating between the facts of major importance and those of less practical value and in arranging the facts selected in the most useful manner possible. For this reason we believe the work to be among the best available for the use of students, while practitioners will also find it eminently satisfactory. —C. E. DE M. S.

EXERCISE IN EDUCATION AND MEDICINE. By R. Tait McKenzie, A.B., M.D., Professor of Physical Education, and Director of the Department, University of Pennsylvania. Octavo of 406 Pages, with 346 Illustrations. Philadelphia and London: W. B. Saunders Company, 1909. Cloth, \$3.50, net; Half-Morocco, \$5.00, net.

Dr. McKenzie has, in this attractive volume, presented the subject of exercise with a thoroughness which is all his own. There is no other book in the English tongue, so far as we know, which is anything like so complete and authoritative. He is peculiarly qualified to speak upon the subject by experience, taste and an extraordinary knowledge of anatomy (which for many years he taught), and also from the standpoint of an expert in orthopedic surgery. In addition to these special lines of fitness he happens to be a sculptor of international reputation, and hence his appreciation of conformation, pose and action is particularly nice. Many of the abundant and excellent illustrations are from his own works or photographs of his own taking. The book will be of utility not only to the student of medicine but to the student of art as well. It will interest and instruct all those who have any taste for the training of the body in attaining the highest possible qualifications which make for physical efficiency. It is far in advance of any of the more or less partial books that have appeared in America purporting to cover the same ground, but doing so inadequately. It is impossible to find space to say the many commendatory things that the reviewer would like to put on record, and of which he is aware not only from a perusal of the book, but also from his personal knowledge of the author. It constitutes an epoch-making treatise upon an exceedingly important subject which is thereby placed upon a high plane of scientific accuracy and charm of presentation.—J. M. T.

GONORRHEA; ITS DIAGNOSIS AND TREATMENT. By Frederick Baumann, Ph.D., M. D., Professor of Genito-Urinary Diseases in the Reliance Medical College, and Instructor in Dermatology and Venereal Diseases in the College of Physicians and Surgeons, Chicago. Fifty-two Illustrations in the Text. New York and London: D. Appleton & Company, 1909.

The search for information in a large text-book on any special subject is often accompanied with much loss of time and a vague feeling of uncertainty as to the value of the many pages of printed matter which it is often necessary to read before the desired knowledge is obtained. To overcome this difficulty, the author has acceded to the oft-repeated wish of many of his students, and has prepared a small volume of some 200 pages on the diagnosis and treatment of gonorrhœal infections of the lower genito-urinary tract. The anatomy of the urethra, the pathology of gonorrhœa, and a few other points are briefly considered, but the greater part of the book is devoted to the treatment of the disease. To the physician who encounters numerous cases of gonorrhœal infection, this book will prove of decided value, and even the expert in the treatment of such patients will find many helpful points within its pages.—R. B. S.

TUMORS OF THE CEREBELLUM. By John Wyllie, M.D., pp. x + 109. London: H. K. Lewis, 136 Gower Street, 1908. Cloth, 4/ net.

This little volume was written for the use of students preparing to pass their final examination for the English doctorate, but is considerably more than a mere synopsis, and being written in an entertaining manner, by one who appears to be especially familiar with the subject, should be of interest to the general profession. It is "based on the careful analysis of a large number of recorded cases, all of which were proved to be cerebellar tumors, either by operation or post-mortem examination." After introductory sections on the structure and functions of the cerebellum, successive chapters are devoted to headache and vomiting, optic neuritis, changes in the reflexes, ataxia, and other symptoms characteristic of these tumors. The author then discusses the paralyses of cranial nerves as furnishing a key to the localization of the cerebellar disease, the structure and frequency of the various tumors, the diagnosis, prognosis, and treatment. The author considers a period of six months as within the limits of safety in dealing with symptoms of increased intracranial pressure by a decompressing operation, being mindful of the fact that such an operation attempted later in the "chronic" stage of the affection has occasionally been followed by sudden death. The technique of surgical procedures is not considered. In other respects the book should prove useful and suggestive. The chapters on symptoms include records of a number of cases.—L. T. DE M. S.

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No. 2.

Clinical Lecture

DYSPEPTIC DIARRHOEA WITH PNEUMONIA AND MENINGEAL SYMPTOMS.*

By W. C. HOLLOPETER, A.M., M.D.,

Professor of Children's Diseases in the Medico-Chirurgical College and Hospital
of Philadelphia, Etc.

GENTLEMEN: The case for your consideration to-day is that of an exceedingly ill male child, aged fifteen months.

Family History.—Parents are alive and well, yet they are deficient in parental instinct, as the child has been badly neglected. They have two other children, both of whom are healthy. The child had a normal birth.

Previous Personal History.—He developed normally from birth until the first year of life on mother's milk, and was then placed in an institution for babies.

Present Illness.—On October 11th, the institutional attendants first noticed high temperature, accompanied by profuse diarrhoea associated with prolapse of the rectum. He also suffers from excoriated buttocks, anorexia and is very restless.

Physical Signs.—On inspection, the child is seen to be undersized, pale, wasted, and the eyes are weak and closed. The lips are dry and purpuric, the mucous membrane being œdemic. He has sixteen teeth. The generative organs are much excoriated from neglected toilet and highly acid urine; both legs are covered with scars from the knees down. When admitted to the hospital four days ago, the temperature varied from 100° F. to 106° F.; respirations were 30-48, and pulse 106-164. On the first day he had ten bowel movements; on the second day, fifteen; on the third day, fifteen; and on the fourth day, eleven. The stools were green, greenish-yellow and dark, and con-

* From a clinic held in the amphitheatre of the Medico-Chirurgical Hospital, October 20, 1908.

tained much mucus. Colonic irrigation brought away green stools with mucus. The temperature now is 100° F.; the pulse, 142; respirations, 44. The lips are very red, and herpes are present at the angle of the mouth. The gums are swollen and very tender; an exaggerated catarrhal stomatitis; the mouth is inflamed and the tongue heavily coated. The child has also a troublesome cough, and is unable to cry properly, the voice being feeble and muffled. His head is retracted and the neck is rigid; feet œdematous.

Diagnosis.—This is an advanced dyspeptic diarrhœa, associated with pneumonia and meningeal irritation. In neglected gastro-intestinal irritation like this, a train of symptoms usually occurs which masks the true trouble. The closed eyes and retracted head with bent and rigid neck are strongly suggestive of meningitis. The sordes on the teeth and lips, and the herpes about the mouth indicate neglect or some lung inflammation. The eruptions on the legs appear in cases of profound shock, due to vasomotor disturbances preceding the present illness, or they may be due to the child's present condition, or possibly to syphilis. On percussion of the lungs, the base of the left one was found to be consolidated, the child was admitted as a case of pneumonia. We find the child suffering from a severe intestinal toxæmia, the result of a dyspeptic diarrhœa and two severe complications: pneumonia and cerebral irritation that closely simulates meningitis.

Prognosis.—Grave. In institutional children this is always the case.

Treatment.—Colonic irrigation carefully conducted daily. A course of calomel, one grain in broken doses, followed in two hours by castor oil, one teaspoonful. After replacing prolapsed rectum, touch each time with ice poultice. For excoriated genitals and buttocks, apply ichthyol 2 per cent. in watery solution. If the child should need stimulation, and the condition indicates it, give the following:—

R Strychninæ sulphas	gr. $\frac{1}{60}$.
Spiritus frumenti	m xv.

Signa: Every four hours.

Apply hot camphorated oil to the chest, and apply a flannel bandage. With this child, and its complications, we should meet conditions as they arise. If there be much vomiting, wash out the stomach and colon, and use a starch enema, not more than two ounces, after the above to soothe the bowel. Castor oil is very good, as it cleans out the upper bowel and then arrests peristalsis. For two days give barley water, two fluidounces, every two hours; for the next two days give whey, two fluidounces, every two hours. The room must be cool, quiet and dark—this is one essential of success in the management of ill children.

The prolapse of the rectum indicates loss of nervous control, therefore we must work on general principles to balance this loss of power, i.e., ice-cap to head and hot-water bottles to feet, to be continued throughout the fever. When the fever is high, the child should be sponged at least once a day, and an antiseptic mouth wash used frequently. For the pneumonia, the application of a mustard leaf is very beneficial. The type of respiration in this case is shallow and tugging in character, and you will also observe a twitching of the

eyes. As he will naturally lie on the affected side, we must see the position is changed every two hours, in order to avoid the risk of hypostatic congestion. If the grinding of the teeth is persistent, give a little bromide, but not unless absolutely necessary. Bronchopneumonia in a child does not call for an expectorant, but if the cough is tight and troublesome, it may be advisable to try syrup of ipecac in small doses—possibly five to ten drops well diluted.

Original Articles

WHICH PREPARATION OF THE PITUITARY IS THE BEST TO USE IN TETANY?

BY ISAAC OTT, M.D., AND JOHN C. SCOTT, M. D.,
Physiological Laboratory, Medico-Chirurgical College of Philadelphia.
PHILADELPHIA.

THE removal of the pituitary in part causes even in man an enlargement of the thyroid. Extirpation of the thyroid causes an increase in the size of the pituitary. We have shown¹ in feline tetany that the pituitary gland given in distilled water subcutaneously had an effect at least equal to the calcium salts in alleviating the tetany after complete parathyroidectomy. As calcium has failed in several instances to cure tetany in man it is necessary to seek other agents to combat the disease.

Professor Pal, of Vienna, reports² a case of severe tetany in a boy. He gave pituitrin and the tetany disappeared in twenty-four hours, whilst the other symptoms retrograded. We have made experiments with pituitrin in feline tetany and find it has some effect which is, however, quite fugitive. We then tried the infundibular extract (of Burroughs Wellcome and Company, 20 per cent.). It had a much more prolonged action than pituitrin, even when we gave the latter in ounce doses subcutaneously. But neither pituitrin nor infundibular extract had the continued power that the whole gland exerts. We used all these preparations subcutaneously. As the boiled filtered infusion of the whole gland can not be readily used we would recommend as the next best preparation the 20 per cent. infundibular extract of Burroughs Wellcome and Company by intra-muscular injection, in doses of seven drops three times a day. It should not be used subcutaneously, as it might cause some necrosis of the skin by the vaso-constriction. As infundibular extract is not poisonous, it can be used oftener than three times a day if the conditions necessitate it.

¹ New York Medical Journal, Dec. 10, 1908.

² Wiener Klinische Wochenschrift, July 8, 1909, No. 27, p. 983.

PSYCHOTHERAPY.

By WM. E. MAGRUDER, M.D.,
SANDY SPRING, MD.

HENRY H. GODDARD, of Clark University, in an article published in the tenth volume of the *American Journal of Psychology*, in which he gives an account of a very extensive, and I think, impartial investigation of the various systems of healing now being practiced in this country, says: "Perhaps no question is forcing itself upon the attention of society, concerning which there is so little knowledge, and so much prejudice, as the question of the value and rights, of the new methods of treating disease, included under the comprehensive term 'Faith Cure.' In some one of its forms it is making its appearance on all sides. The medical man has it to contend with; he finds a patient has left him to try a mental practitioner; or else he is called upon to treat a new patient upon whom 'mind cure' has failed. The legal profession has occasionally to decide whether the mental healer is guilty of malpractice, or the friends or relatives of the deceased guilty of 'culpable neglect,' because they trusted to some form of mental therapeutics, and did not consult the recognized doctors of medicine. The minister meets it in a more or less persistent theological doctrine, which he must either uphold or denounce. Finally, no person can see a friend enduring a lingering illness, unbenefited by the arts of the physician, without having this new method urged upon him, and without having at least the beginnings of a query in his own mind as to whether there is 'anything in it' or not. And if the friend who looks on, how much more does the sick himself, wearing out the weary hours of suffering, watching the weeks grow into months, and the months into years, with no improvement, wonder, if, since everything else has failed, it may not be worth while to try the prayer cure, or hypnotism, Christian Science, or some of the other methods often spoken of as having been effective in curing disease. We have alluded to 'Faith Cure' practice as among the new methods of treating diseases. As a matter of fact the principle is as old as human history, and only claims and methods of applying it are new. The records of history show that many marvelous cures have been effected among all peoples, ancient and modern, savage and civilized."

Having examined critically a large number of the cases reported as cured by the various methods in vogue, he says: "In spite of the severe criticism we have made of the reports of cure, there still remains a vast amount of material showing a powerful influence of the mind in disease. Many cases are of diseases that have been diagnosed and treated by the best physicians of the country, or which prominent hospitals have tried their hands at curing, but without success. People of culture and education have been treated by these methods with satisfactory results, diseases of long standing have been ameliorated and even cured. The numerous cases of temporary arrest of disease, while not showing power to cure, yet exhibit a wonderful power of some sort."

He also says: "We have traced the mental element through primitive medicine and folk-lore medicine of to-day, patent medicine, and witchcraft. We are convinced that it is impossible to account for the existence of these practices, if they did not cure diseases, and if they did cure disease, it must have been the mental element that was effective. The same argument applies to those modern schools of therapeutics, 'Divine Healing,' 'Christian Science,' etc. It is hardly conceivable that the large body of intelligent people who comprise the body, known distinctively as mental scientists, could continue to exist if the whole thing was a delusion. It is not a thing of a day. It is not local. It is not confined to a few. It is true that many failures are recorded, but this only adds to the argument. There must be many and striking successes to counter-balance the failures, otherwise the failures would have ended the delusion."

The same writer, in that same paper, published a few out of hundreds of letters he received from persons who claimed to have been cured. In order to give a good idea of the practice of mental healing he also says: "We take this opportunity to call attention to one fact often misunderstood; it is supposed by many who have given no special attention to the subject, that those with whom these methods are successful are the ignorant or superstitious, or else those whose diseases were imaginary. That such is not the case, is evident from these letters. Many of these people are college-bred, nearly all of them are cultured and refined. As to their diseases, while it is thought best to omit the names of physicians and institutions, we may say that in nearly all cases the names were given, and were physicians of good standing and in some the most noted specialists, so that while we may see later that the troubles were of mental origin, they were far removed from what is ordinarily understood by imaginary. Such cases as the foregoing (as described in the letters) are sufficient to arrest the interest in mental healing, and when we recall that they are only fair examples of cases that are being reported on all sides, we cannot wonder that the uncritical are being continually led to believe in the infallibility of these methods." And he furthermore adds: "Before jumping to this conclusion, however, it is necessary to examine critically all the circumstances that may explain the (so-called) 'miracles' by referring them to recognized laws. We have accordingly examined all the data, for internal evidence, of rational explanation on the basis of well-known facts; and secondly, for cases of 'miraculous' cures in general medical practice. We find much to modify any hasty judgment that one might be tempted to make."

"The first thing to be mentioned, is the hysterical diathesis. This is a condition far more prevalent and troublesome than most people realize. It is a mental state without, as far as is known, any pathological condition behind it. . . . It is perhaps best characterized as a condition in which the emotions preponderate over the intellect and will. The disease exists in all degrees, from the slight deviation from the normal to the completely insane. There are no pains that may not be of hysterical origin. Disease of the joints are among the most common. Neuralgia is often of hysterical origin. The functional actions of the viscera are especially liable to derangements in hysteria. Any organ may be affected, but the stomach seems to be the favorite

one. Not unfrequently organic disease of the heart is simulated, there being palpitation, generally irregular action of this organ. Nor are the conditions thus manifested superficial appearances merely. They frequently baffle the most skilful physicians, for a time at least. It is hardly necessary to add that mental science is just the thing for these people. There is no doubt that some of these derive great benefit from some of the forms of mental treatment, who have failed to do so from physicians who are skilful. It is from this class of cases that the various forms of faith cure find their recruits."

Another fact to be noted is, that many diseases are cured spontaneously—no treatment of any kind having been used. Indeed, it is a question whether a large majority of all diseases would not be cured with rest and hygienic measures alone.

Dr. J. William White in an article entitled, "The Supposed Curative Effects of Surgical Operations," published in the *Annals of Surgery*, August and September, 1891, has shown many diseases that have been cured by what he calls the "Reaction of Traumatism," due to the simple preliminary cutting; the intended operation having been given up on account of the conditions found, rendering such operation impracticable.

Dr. Goodell, of Philadelphia, March 27, 1891, says: "I have seen two cases of fibroid tumors of the womb, as large as the adult head, dwindle down almost to an inappreciable size after an exploratory incision. In each, the object of the operation was the removal of the ovaries, but they laid behind a universally adherent tumor and could not be touched."

Dr. Joseph T. Johnson, Washington, D. C., March 24, 1891, says: "I have opened the abdomen in two cases, when I did not know what was the matter and don't know now, but the patients both got completely well. One appeared to be malignant, and for that reason, upon the advice of all present I abandoned the operation, and told her husband I thought she would die. She got well and since has had a baby, and is now in good health."

Dr. H. J. Bolt, New York, March 1891, writes: "A young woman complained of most intense pain in the left ovary. She really was in agony. This continued several weeks. She lost flesh, was bed-ridden, temperature 101° to 103°. Could not be touched in the ovarian or hypogastric region without a scream. On opening the abdomen nothing was found to account for the symptoms. She was merely washed out and sewed up again. Recovery in every way was prompt and perfect."

Physicians have always recognized the mind as a direct or indirect cause of many diseases and there is much to be found in the medical literature on the subject, but as a means to be used in curing disease they have generally ignored it. The few who understood its power and used it for that purpose did so in a very indefinite way.

Within the last twelve or fifteen years, the minds of the medical profession have been specially directed to it, and some of the most eminent physicians are now using it in their private practice and in hospitals and sanitariums. Even a number of churches are taking it up as a part of their church work.

Dr. Barker, of Johns Hopkins Hospital, in a paper read at the meeting of

the Association of American Physicians held in Washington, D. C., May 15 and 16, 1906, said: "While in Paris, I was much impressed with what I saw in the so-called Pinel Ward of the Salpêtrière. In this ward of thirty beds, more or less, Professor Déjerine was treating the psychoneuroses, especially hysteria and neurasthenia by isolation and psychotherapy. Drugs were but seldom employed; hypnotism was not used. The results attained were very striking. Paralyses, contractures, anorexias, nervous crises, gastropathies, etc., many of them having lasted for months or years, disappeared in a few days, weeks or months under the influence of this simple treatment.

"These observations, together with the perusal of a book published by two of Déjerine's former assistants and of another volume, that of Dubois of Berne, an author to whom Déjerine also acknowledges indebtedness, made me determine to try in practice myself, at the first opportunity, the methods of practice referred to.

"During the past year in the medical service at the Johns Hopkins Hospital this opportunity has come to me, and the results that have been obtained, through systematically combining conscious psychotherapy with rest in bed, isolation, and other measures, have been so satisfactory in a certain group of cases, that I have thought a brief report of the matter might be interesting to this association. . . .

"What has surprised us most in the hospital in which I work is the remarkable, at times wonderful, efficacy of the simplest measures of psychotherapeutic methods which are within the reach of all hospital physicians and certainly of many private practitioners. The patients who respond most promptly to psychotherapy, are the psychoneurotics, sufferers from neurasthenia, hysteria psychasthenia, etc. Many of their symptoms disappear rapidly under moral treatment. Among the hysterical, the paralyses, the contractures, the anæsthesias and the pains are amenable. Among the neurasthenics, psychic treatment aids enormously in combating the sensation of fatigue, the circulatory disturbances, the insomnias, the digestive troubles, the sexual weaknesses, and the abnormal mental states. . . .

"It is not in the so-called functional diseases alone, that psychotherapy and re-education are of value. We are gradually learning the usefulness of these measures too in organic diseases, chiefly of course in combating the functional disturbances associated therewith; but in tabes, in aphasia, and other disturbances of speech, even in circulatory and respiratory diseases, these methods find a place."

We have had under treatment since October 1, 1905, a large number of cases—more than eighty—in which psychotherapeutic measures have been our mainstay. I shall record a few of them only, as illustration.

From the fifteen cases reported in that paper I have selected two which I have taken the liberty to condense somewhat.

"Miss E., aged twenty years, admitted December 15, 1905; discharged February 5, 1906. Complained of stomach trouble; had an idea that she should be operated on for ulcer of the stomach. She had a somewhat similar attack ten years before, when she was ill for six months. Five years ago, began

to have a sense of heaviness in the stomach, just after meals, relieved by vomiting; continued with remissions, until six weeks ago, when she began to feel very much worse, vomiting immediately after eating or within half an hour. She has been very nervous; has suffered from hot and cold flashes, and has had severe headache above the eyes. She entered the surgical service of the Johns Hopkins Hospital, under Professor Halsted's care, and the latter deciding that operation was not indicated transferred her to my service for medical treatment.

"Treatment.—Patient was told that there was no evidence of organic disease of stomach, that she would not have to be operated on, and that she ought to get perfectly well. She was kept in bed, isolated from her family, fed on small quantities of milk, gradually increased, every two hours for a week, after which she was given the ward diet without choice. She was given a cold sponge every morning, and a cold pack at night. Daily psychotherapy. Her symptoms rapidly disappeared and she left the hospital February fifth, apparently in perfect health, having gained twelve pounds in weight.

"Mr. F., aged thirty years, single, business man of sedentary habits, consulted me for diarrhoea and inability to control bowels. About a year ago, was seized with an attack of pain at dinner, followed by cramps and diarrhoea, which left him somewhat depressed. Since then his bowels have been irregular. Some six months ago a friend died, and on going to the funeral he was without notice asked to be pall-bearer. This was a great shock to him, and since then his symptoms have been worse. During the last two or three weeks he has had much pain, cramps in the abdomen and diarrhoea. The stools are sometimes well formed, occasionally they are watery, sometimes slimy. On one or two occasions, the stools have consisted wholly of mucus. He had noticed no blood or sand, nor has he ever seen long strings of mucus. He has lost about six pounds in weight. Sleep has not been disturbed. The symptoms are not definitely related to meals. The defæcation is at times imperative, and he is unable to control the bowels long enough to reach the closet. The appetite is good, though he has been restricting his diet recently, taking no vegetable except boiled potatoes. He has not used coffee for over a year. On account of the history and the fact that the patient has done much yachting in the Chesapeake Bay and drunk water from various sources, the possibility of amœbic dysentery was thought of. The stools were carefully examined for amœbæ, but none found, nor were there other intestinal parasites. The mucus was so abundant and the tenesmus so intense that a thorough rectal examination seemed desirable. Accordingly Dr. Sowers examined the whole rectum through the proctoscope. The mucous membrane was everywhere reddened and the surface exuded slightly bloody mucus and pus, about one dram of this being obtained. The blood and mucus were thoroughly studied microscopically, but contained no amœbæ, no tubercle bacilli, and no gonococci. Rectal irrigations of warm salt solution were kept up for a time, but seemed to have but little effect. As the patient was studied further, the importance of the nervous side of the case became obvious. Accordingly he was isolated, kept in bed, fed liberally, asked to pay as little attention as possible to abdominal

and rectal symptoms, and encouraged to think he would get well. He was given a few rectal injections of silver nitrate, 1 to 1500. Under these measures he gained twelve pounds in weight, the diarrhoea and pain ceased, he got control of his bowels and seemed better every way. He was discharged at the end of nine weeks, feeling very well. He went to Atlantic City for a short after-cure, and returned to his work. He has been at work for nearly six months since and still keeps well."

Some years ago I added to my library two valuable books: "The Force of Mind," by Schofield, and "The Psychic Treatment of Nervous Disorders," by Dubois, and I regret that I did not have the knowledge I derived from them many, many years ago, for in looking back over more than a half century I can recall many cases where the knowledge I gained from them would have been of great benefit in relieving suffering and promoting the cure of disease.

The earlier chapters of the latter book which contained philosophical and psychological speculations did not awaken in me very much interest; but it was very different when I read that part, where the author reported a number of cases and his methods of treating them.

Dr. Dubois says: "Psychic therapy is indicated in all the affections in which one recognizes the influence of mental representation of ideas, and they are legion. It is a great mistake to believe that psychic therapy is applicable only to psychoneuroses, that it is an aid for the specialist in neurology and the alienist alone, and that the practitioner can pass it by. Moral (mental) influence nearly always comes in, and ever since medicine existed patients and physicians have been able to prove it. It is not unusual to see the patient's condition improve immediately after the visit of the physician, because of the favorable assurances he has expressed, or the sympathy which he shows to his patient. This psychotherapy has existed through all time. To know how to apply it has always been the highest quality of those practitioners who are also physicians of the soul, and who have known how to acquire a confiding and appreciative clientèle. They are, perhaps, more numerous in the country and small towns than in the great centers, where competition develops commercialism, and tends to make the physician forget his humanitarian calling. . . . In organic diseases therapeutic intervention may act materially either on the lesion or on the symptoms, for man does not suffer merely as an animal. He does not feel only the crude painful sensations; he exasperates them by his fears and his pessimistic reflections. Often what he calls his soul is more diseased than his body. . . . Without resorting to artifice, without telling lies, the physician, by keeping this intention of truth in his mind, must inculcate in the patient's head the idea that he will get well. When having come to a definite diagnosis I tell the patient that his trouble is nervousness, I immediately add, 'and mind you in my dictionary the word *nervous* is always coupled with the word *curable*; these two adjectives go together.' Sometimes the psychotherapeutic will be rapid enough not to require more than one or two conversations, but in the majority of cases the trouble is of too long standing to yield in so short a time.

"In serious and obstinate cases a prolonged treatment is required, where

one can add physical to continued moral (mental). I have adopted to this end the treatment of Weir Mitchell, who as every one knows recommends rest in bed, isolation and overfeeding and various other less important measures. Later, in many cases, I gave up what was often a distressing measure—absolute isolation.”

Out of quite a number of interesting cases reported I have selected two for this paper. One is a case of nervous diarrhœa which Dr. Dubois asserts is of very frequent occurrence: “A man fifty-eight years of age, consulted me for a chronic diarrhœa, which had resisted all the medications of a confrère who was as expert as he was prudent in his treatment. . . . Thinking there might be intestinal catarrh, perhaps even a neoplasm, I had recourse to diet and medication. . . . But the diarrhœa increased every day. . . . Little by little I became acquainted with the mental characteristics of the subject. I detected hypochondriacal tendencies and his inclination to think only of himself, and so one day I turned on him, saying in a kindly but somewhat crusty manner: ‘But, my dear sir, I am beginning to think that your diarrhœa, which arose some day under whatever cause it may have been, only lasts so long because you are always thinking of your intestines. Will you please try to forget it, and think of the people around you whose existence is made intolerable by your culinary demands. Your wife can no longer think of anything to cook for her tyrant.’ On questioning the patient a little longer, he acknowledged to me that he talked constantly of his diarrhœa and that he predicted its appearance to his wife, before he had even touched the dish which she had prepared for him. He recognized without any trouble the rôle which his preoccupations had played. He continued a hearty diet which led to increase of weight, and the diarrhœa stopped in the course of a few days. The patient has been cured several years, and has only preserved a certain sensitiveness of the intestines to certain digressions in diet which it is easy for him to avoid. . . . More often nervous diarrhœa is accompanied by gastric dyspepsia, anorexia, eructations, belchings, flatulency, and distinctly neurasthenic symptoms, such as headache and powerlessness to act. These patients when kept in bed, and on a preparatory milk treatment, stand overfeeding very well.”

The other case as described by Dubois is hysteria: “Madam V— was a lady, forty years of age, who was sent to me as a desperate case by a physician who was a stranger to me. Very intelligent, but endowed with disordered sensibility and a vivid imagination, she had an unhappy existence. Her conjugal life had been profoundly troubled; she had lived apart from her husband. Already subject to nervous troubles and attacks of psychic depression, she had seen her condition grow worse after the birth of her daughter. Under the influence of fatigue and emotions, she had fallen into a psychopathic condition with predominant hysterical symptoms, with almost permanent states of astasia-abasia, crises of contracture, pains, and various paræsthesias. She had passed through several attacks of delirium. For about nine years she had undertaken various treatments and rest cures, according to Weir Mitchell, and at high altitudes. She had exhausted the whole series of antispasmodics.

"Five years before, starting from a false idea that hysteria is a morbid entity and of genital origin, her physicians had removed the uterus and ovaries. This intervention had only produced a fresh recurrence of psychopathy.

"The patient was so afflicted during the last months that she was obliged, on several occasions, to postpone the journey she wished to take, and came to me in a special car in a state of utter helplessness. On her arrival I observed that the patient was in a good state of nutrition and did not complain of any symptoms which could make me suspect an organic affection.

"The psychopathic condition stared me in the face, and I noticed the following symptoms: (1) complete astasia-abasia without any symptoms of paralysis, properly so-called; there was in the dorsal decubitus a certain weakness of the extremities, but the energy of the movements would be sufficient to permit her to stand; (2) asthenopia, preventing reading and writing; (3) impossibility of sitting down, partly on account of muscular weakness, and partly for fear of pains in her back; (4) photophobia, obliging the patient to draw the curtain and turn a mirror to the wall because the light hurt her; (5) sensibility to cold to such a degree that on a warm day in June she enveloped her head in a woolen scarf.

"The next day in a conversation with my amiable and very intelligent patient, I told her, 'Your trouble is psychic, entirely psychic, and you have no need of material treatment.' The patient did not insist, and in a quiet way, scanning the question as if to fix her ideas, said to me: 'You believe then, that I could read, write, and stand the daylight if I had the inner conviction that I could do all that?' 'Yes, you have good eyes; the oculist has told you so, I do not see why you could not read, then. The nervous asthenopia, as we call it, has never been anything but a conviction of powerlessness.' 'You also believe that I could stand on my feet and walk from the moment that I have the conviction of this power?' 'Yes. You have no paralysis, nor any cerebral, medullary, nor peripheral affection that would hinder you from walking.' 'Very well; I see I must change my whole manner of looking at my trouble. Why has nobody told me this before?' This conversation took place on Saturday. On Monday I found the patient sitting up in bed. She held in her hand a letter, which she had written to her mother, which she was re-reading. The curtains were drawn, letting the daylight come in. The mirror had been placed in its usual position. The patient had taken the woolen scarf from her head. In short she smilingly made movements in her bed to show that she meant to get up soon! Three days after she was on her feet. All the old helplessness of nine years had disappeared under the influence of an idea. From that time the patient rapidly returned to a normal life. I dispensed with rest in bed and all physical measures. The patient went out and applied herself to the reading of philosophical works requiring a real mental effort. She was cured, and feeling confidence in her logical mentality and her fine mind, I felt no fear for her future. It is evident that this patient could have been cured at the beginning of her trouble. It would have been enough to tell her the truth and to encourage her. She was as intelligent as she was practicable.

But although the diagnosis of hysteria was made, that most mental of all diseases, recourse was had to physical measures—even to ovariectomy!"

In the reports of the cases by Dr. Dubois we have the decided confidence gained by about twenty-five years' experience; Dr. Barker says of his: "It seemed desirable to gain experience with the simplest methods." Yet the results were eminently satisfactory with both.

With the light that has been thrown on the subject of psychotherapy within the last decade, the medical profession can no longer afford to relegate this to the domain of superstition and imposture, but must grapple with it, and seek to understand the laws by which it is governed so as to be able to use it intelligently for the relief and cure of disease. It has a physiological basis; and the fact that quacks and charlatans have, in the past and in the present, been using it should be no reason why physicians should not use it. They would find it to be one of the most useful therapeutic agents of all they have been using to relieve and cure the sick in a certain class of cases.

When we study the body, we find it is composed of myriads of cells, which are differentiated according to their functions. All these cells have sprung from a microscopic cell which when fertilized began to divide and form new cells, which was kept up until the whole body was formed. The force that directed all this aims to keep the cells to their intended functions.

"Disease of the body," as Virchow says, "is disease of the cells of the body." This force that developed and controls all these cells of the body is the force we must look to to heal the body when it is diseased or injured. When a bone is broken this force causes lymph to be poured out, around and between the ends of the bones and, in course of time, bone-cells are formed and the injury is repaired. When a wound becomes infected the leucocytes or white corpuscles of the blood are hurried to the field to destroy, if possible, the diseased germs and prevent their entrance into the body, etc.

This force or power which the psychologists call "Unconscious Mind," "Subliminal Mind," i.e., mind below the threshold of consciousness, is under the influence of our conscious mind; as when the face becomes red from shame and anger, which results in a dilatation of the arteriole, or when fear causes paleness which results from contraction of the arterioles, and other instances might be given. Availing himself of this force the physician can accomplish much for the benefit of his patient. He should always carry sunshine into the sick room.

A striking instance of this influence of the mind on the body is given in Godwin's "Life of Victor Emanuel." "When cholera was raging in Naples, and the panic-stricken inhabitants were migrating by thousands from the city, the king went the rounds of the hospitals. He stood beside the sick beds, and spoke encouragingly to the patients. Before one of those already marked for death, the king stopped, and taking his damp, cold hand, he pressed it, saying, 'Take courage, poor man, and try to recover soon.' The warm grasp of the hand, the strong cheerful words, the recognition of the king's face, had an agitating effect on the man. That evening the syndic visited the king and said: 'Your Majesty's coming is a joyful omen. I am happy to tell you that the doc-

tors report a diminution of the disease in the course of the day, and your Majesty has unawares worked a miracle. The man you saw this morning, stretched for death, is out of danger this evening. The doctors say the excitement of your presence caused the salutary crisis.' ”

I must now close this paper and will do so in the words of Dr. Barker: “Though the limitations of the psychotherapeutic method soon become obvious to those who work with it, we should not fail to do what good we can within its limits. The psychic side of cases is, it is true, only one side, but the physical has been and probably will always remain our chief interest. I think that under existing conditions there is no likelihood of the physis factor in disease being underestimated, or of its claims being neglected, while there can be but little doubt that the psychic factor is too often ignored and unused. This is partly due to the entire neglect of the study of psychology as a part of cerebral physiology. It is all wrong that physicians should make no attempt to reap the crop of good results which might be obtained by psychotherapy, leaving entirely to others those exceptional harvests which astound the unenlightened, and make the fame and fortune of quacks.”

THE INSANE IN PENNSYLVANIA AND WHAT THE STATE IS DOING FOR THEM.¹

By FRANK WOODBURY, M.D.,

Secretary to the Committee on Lunacy of Pennsylvania.

MR. PRESIDENT AND GENTLEMEN: When, a fortnight ago, the Chairman, Major Nibecker, did me the honor of inviting me to appear before this Conference to give some account of what Pennsylvania is doing for her indigent insane, I accepted the appointment with pleasure. I was indeed gratified by the compliment of being asked to assist in carrying on the great work of which this audience is representative. There is an additional reason, however, why I am glad at this time to discuss what Pennsylvania has done and is now doing, for the humane care of her dependent insane.

A few days ago, my attention was attracted to an article relating to this subject, which appeared in the December issue of a popular magazine. This article, with the rather startling caption of “The Barbaric Care of the Insane,” no doubt has been read by most of my audience. It seriously arraigns present methods throughout this country of caring for the indigent insane, and gives a truly shocking description of the mismanagement in some of the county almshouses in a neighboring State. I say some of the almshouses, for I cannot believe that such conditions can be universal, or even general, in a State as enlightened and cultured as Maryland. The writer of that article, without qualification, declared that the almshouse insane are

¹ Read before the First Pennsylvania Conference of Charities and Correction, at Harrisburg, Dec. 7, 1909.

"those for whom no provision has been made." He specifically charged that in these almshouses grave abuses now exist, and expedients are resorted to "which parallel those horrors which Pinel exposed in France in 1828." The author of the article which I have referred to, it should be stated in parenthesis, is a distinguished member of the medical profession, and fills a position similar to my own in this State, he being secretary to the State Lunacy Commission of Maryland. We are, therefore, obliged to accept without question his statements concerning certain conditions, which he declares to be now existing in county almshouses of Maryland. In truth, the condition of the thousand insane confined in county almshouses, jails and isolated huts, as depicted by him, is deplorable. If permitted to continue it would constitute a reproach to any community in which it is tolerated. Dr. Herring has done a notable public service in calling attention to this state of affairs, and has only performed his duty in exposing such institutions to public condemnation. But he has done more than this. His communication contains the records of several cases in which he himself was instrumental in correcting abuses by promptly removing the patients to the excellent State hospitals of Maryland, where they received humane treatment, and skillful medical care, with the modern appliances for the treatment of insanity.

You may possibly wonder what all this has to do with the subject assigned to me. Simply this: That the conditions which Dr. Herring justly described as "shocking and revolting," which he found "in a recent investigation among the insane in the various counties of Maryland," it must be confessed are not unlike the conditions in some parts of our State of Pennsylvania about a quarter of a century ago.

In 1882, a commission was appointed by the Governor of this State, to examine into the system of caring for the insane of the State and inquire into the legislation of other States and countries, and to report the result of their investigations with their conclusions and recommendations for further protection and amelioration of the insane. This commission consisted of John F. Hartranft, Richard C. McMurtrie, Jos. A. Reed, S. Weir Mitchell, D. Clarke Davis and Geo. L. Harrison. In transmitting their report, Governor Hoyt, in his message, stated that "This commission was constituted of persons who possessed a high order of learning and experience on the question, and whose professional reputations demanded the most conscientious and practical consideration and action." Never were words of commendation better deserved. The work of this commission was so well done, that, with only slight modification, the report was accepted and enacted by the Legislature. It was approved by the Governor on the eighth day of May, 1883. With its amendments it is still operative, and is generally spoken of as the Lunacy Law of 1883. This Act specifically created the Committee on Lunacy, which was closely bound to, and is, in fact, organically a part of, the Board of Public Charities of this State. Time and occasion will not permit a review of the beneficent operation of this law, and the work of the Committee on Lunacy of Pennsylvania for the last twenty-six years. Suffice it to say that, through the operation of this law and the assistance and encouragement given by the Committee to the

local authorities, the unhappy condition of the indigent insane in the jails, penitentiaries, and county almshouses, which Dr. Herring describes as now existing in his State, has gradually been changed for the better, until at the present time, such conditions as he describes as existing in Maryland certainly do not have any parallel in Pennsylvania. When he says, for instance, that in the almshouses the poor insane "are not cared for rationally, in any sense of the word," his words do not apply to the insane under county care in this State. When he says that only one State (New York) has anything like adequate equipment for the care of the insane; and that in all others a great proportion of the unfortunates must be kept in almshouses with no treatment whatever, except "chains and cruelty," I say again that his strictures do not apply to Pennsylvania.

It is pertinent now to take up for consideration what Pennsylvania is doing for its insane.

The Committee on Lunacy, on its organization, found a large number of cases, some of whom, it must be admitted, were suffering from neglect and abuse. These were all removed to the State hospitals, and the almshouses forbidden under penalty to continue such barbaric methods of restraining the insane. Many cases were found in private houses, or chained in log huts, and these were also promptly removed to the State hospitals. At the present day I firmly believe that no poor insane patient could possibly be kept in an almshouse or elsewhere in Pennsylvania and treated in the manner described by Dr. Herring, without the fact speedily coming under the observation of the Committee on Lunacy, when the condition would be at once corrected. In point of fact, I may declare that such conditions no longer exist in Pennsylvania, although they unquestionably did to a greater or less extent twenty-six years ago. I repeat then that the indictment fails if any attempt is made to apply it to present day conditions in this State.

Dr. Herring blames the parsimony of the average legislator, and states that the conditions of which he so justly complains as existing in Maryland, and about which he feels righteous indignation, could all be remedied by liberal appropriations by the State Assembly. I am proud to say that this criticism also has no application to this State. The Legislature of Pennsylvania, at its last session, voted for the maintenance of the indigent insane for the years 1909 and 1910 the magnificent sum of \$3,000,000. In addition, it passed special enactments in favor of individual hospitals for the insane, for construction and equipment; etc., the sum of \$3,035,185.88, making a total for the insane of over six millions of dollars. The aggregate amount of the appropriations for charitable, benevolent and penal institutions for the same period amounted to \$14,458,192.65. The insane and feeble-minded together received nearly 42 per cent. of the philanthropic gifts of the State, the next largest beneficiary being the consumptives with over two millions of dollars (\$2,106,500).

The State of Pennsylvania has actually in operation at the present time six large State hospitals especially for the care of its insane, situated at Harrisburg, Danville, Norristown, Warren, Dixmont, and Wernersville, with

a total population of nearly nine thousand patients. It has more under construction, one near Allentown, which will give one thousand beds additional. There is also the hospital for the criminal insane at Farview, in Wayne County, which, when completed, will have a capacity of one thousand beds. Two large State institutions are provided for the feeble-minded, one at Polk (1065 beds), and one at Spring City (Boys' Department only in operation, with 400 beds). In addition, the State supports 750 feeble-minded children at a private institution situated at Elwyn, Delaware County.

A little more than ten years ago, the Committee on Lunacy discovered that the number of the insane was increasing at a more rapid rate than the accommodations for their care and treatment in the State hospitals could be provided by the Legislature. Looking around for a remedy, their attention was attracted by the plan which had then been in successful operation in the State of Wisconsin for about fifteen years. This method of "County Care," as it was called, contemplates the erection of suitable buildings by the several counties of the State for the care of their own chronic insane, the State sharing the expense by paying a certain sum per week for the maintenance of such cases. It was provided by law that these buildings must be erected according to plans approved by the Board of Public Charities, and the care and treatment must be supervised by the Committee on Lunacy, from which they receive their license to receive patients, and to which they must report all admissions, discharges, etc. No transfer from one institution to another can be made without the authority of this committee, nor can any unimproved indigent patient be discharged unless by its consent. As fast as proper buildings were provided by the local authorities, the chronic insane have been removed from the State hospitals to the county institutions, where, as a rule, they now receive the same quality of care and humane treatment that they formerly received in the State hospitals. The advantage of restoring patients to the vicinity of their own homes, where their friends and neighbors can visit them and oversee their treatment, I will not dwell upon. I will only say, among the poor districts and counties which have complied with the provisions of the law in Pennsylvania, there are hospitals for the insane which are model institutions in every way. I need only mention Chester County, Luzerne County (Retreat), Lackawanna County (Hillside Home), Allegheny County (Woodville, Marshalsea and West Side), Blair County (Hollidaysburg), as illustrations of the best class of construction and equipment, under the management of experienced, skillful, and conscientious physicians. I must also include Philadelphia County, for, although the population has greatly outgrown the old buildings, yet, under the direction of the present medical superintendent, it is in the first rank as regards psychiatric treatment. Its patients are treated by modern methods and appliances, as in the State hospitals, and the hydrotherapeutic treatment, approvingly mentioned by Dr. Herring, is in constant use. Under the system of county care, Philadelphia County alone receives from the State nearly a quarter of a million dollars annually. By the last Legislature the amount of money paid to the county hospitals for the care of the indigent insane was

increased to \$2.00 per week, and to the better class, \$2.50 maximum. To receive this, however, they must be licensed by the Committee on Lunacy and have their accounts approved quarterly by the Board of Public Charities, which must also certify to the satisfactory quality of care and equipment. In this way a high standard of rational, humane treatment is generally maintained, even in the county almshouses.

About a year ago, I visited Wisconsin and inspected the County Hospitals for the Insane, and I found that the authorities after twenty-five years of experience with this method, still approve of it, and propose to continue it. The patients are better cared for physically in the smaller institutions; it is easier to provide work for them, and they are, as a rule, more contented. They raise practically all the food they consume, and do their own work, so that the money paid for their maintenance is nearly all profit. In this way, the county authorities, in many instances, in the State of Wisconsin, in the course of fifteen years, accumulated sufficient surplus, to pay off all their obligations, with interest, and to obtain their hospital without cost.

After ten years' experience with "county care" in Pennsylvania, the Committee on Lunacy likewise affirms its approval of this system, and declares it to be a success. In fact, the adoption of this plan saved the situation, because our State hospitals, even though so generously provided, could not accommodate more than half of our sixteen thousand insane, which must be cared for at the present day. If there were no existing county hospitals to send the surplus to, the Committee on Lunacy would have failed. The insane poor would have had to languish in jails and prisons, and endure such poor accommodations as ordinary almshouses could afford, because there would be no other place to which they could be sent.

As you know, the task is growing greatly from year to year. The proportion of the insane is gaining on the ratio of increase of population. Forbes Winslow, a distinguished English alienist, not long ago raised a warning voice against the evils of modern civilization, and declared it to be his opinion, that, unless something effective were undertaken to check the increase in insanity, the time would ultimately arrive when there will be more insane than sane in the population. Some of the recent excesses of suffragettes in England might lead a pessimist to declare that Dr. Winslow's prediction has been fulfilled sooner than he anticipated.

Personally, I prefer to be optimistic and hope that a remedy may be found that will lead us as a people into ways that are safe and sane. In the meantime, however, we have even now more insane to provide for than all the State and county hospitals can properly attend to. All of our State hospitals are filled to their rated capacity, and most of them considerably beyond it. Most of the county hospitals have all their beds filled and have many sleeping on chairs and benches, some on the floor. In addition, a few almshouses still have insane patients who have not yet been transferred to licensed institutions. I regret to say that there are more than 300 of these, awaiting the completion of new State hospitals, and the erection of new "county care" institutions. It must, in justice to them, be stated that the

local authorities are doing the best they can, and the insane poor are humanely cared for, even if not treated as well as in the large State hospitals.

To summarize my conclusions, I would say that:—

(1) Pennsylvania has now in its institutions a population aggregating nearly 16,000 indigent insane, and, if we include the feeble-minded and imbeciles, we have a grand total of 17,261, which are supported wholly, or in great part, by the public authorities.

(2) The State has a system of State hospitals under the charge of experienced alienists, with a corps of assistant physicians and experienced nurses, fully equipped for the treatment of the insane and feeble-minded. There are now seven such hospitals, with three under construction, or partly equipped.

(3) The system of "county care" now in operation in twenty counties of the State is satisfactory, and should be extended so as to relieve the present over-crowded condition of the State hospitals.

(4) The Lunacy Law and the Committee on Lunacy, which it created, have been effective in remedying former abuses, and in ameliorating the condition of the insane.

(5) The Board of Public Charities, acting in conjunction with the Committee on Lunacy and Visiting Boards, by exercising constant supervision, has greatly improved the condition of all classes of almshouse population, and especially the indigent insane.

FRACTURES OF THE PATELLA AND THEIR MODERN OPERATIVE TREATMENT.

By AIME PAUL HEINECK, M.D.,

Professor of Surgery, Reliance Medical College; Adjunct Professor of Surgery, Illinois University; Surgeon to the Cook County Hospital.

CHICAGO, ILL.

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The advantages of circumferential looping or cerclage are (a) that its employment inflicts no additional traumatism upon the periosteal and osseous tissues. The osseous and cartilaginous surfaces are uninjured by the passing of the circumferential ligature. It respects the skeleton. (b) That the ligature material which loops the patella is totally extra-articular. It is introduced and embedded in the peripatellar tissues. Should a metallic ligature, such as silver wire, be used and its presence subsequently cause real or imaginary disturbances, the removal of the real or supposed offending agent can easily be effected without opening the articulation. It respects the articulation. (c) The method is of easy and of rapid execution. The maneuvers incident to its introduction are extra-articular. It can be used as a preliminary or as a supplementary step to any of the various open operative methods in vogue. It no

doubt contributes to the exact coaptation of the bony fragments. As far as it goes, this procedure (cerclage) is safe, logical, and serviceable. No special instruments are required for its performance. To our eyes, circumferential looping, as a method of treatment, has the shortcoming of insufficiency. We use cerclage as a preliminary, or as a supplementary measure to suture of the prepatellar and parapatellar tissues.

Study of the literature of the subject, surgical experience, and clinical observation have led me to consider that the following are the most universally applicable operative steps to be conjointly employed in the treatment of such fractures of the patella as demand operative intervention.

1. The torn prepatellar fibroperiosteal tissues must be carefully sutured. E. Wyllis Andrews, instead of uniting these torn prepatellar tissues, end to end, sutures them in such a way that they overlap one another, that is, they are imbricated one within the other, "shingled as it were."

2. All tears in the parapatellar tissues must be sewed up. It is imperative that all capsular rents be carefully repaired. The suturing of the peri- and parapatellar soft tissues has the approval of all clinicians.

3. To contribute to the maintenance in apposition of the fragments, the patella is circumferentially looped by a ligature passed close to its periphery. This ligature is passed so as to be close to the periphery of the bone, so as to hug it, as it were. It is inserted in such a way that it lies imbedded in the substance of both quadriceps tendon and ligamentum patellæ midway between their anterior and posterior surfaces. If deemed necessary, two such looping ligatures may be used. These different maneuvers are all extra-articular. In some comminuted fractures in which the inter-fragmentary diastasis was slight and in which the prepatellar tissues were practically untorn, I have often limited the operative procedure to looping the patellar fragments and to fortifying the prepatellar tissues by the introduction of a few V-shaped kangaroo tendon sutures, not exposing the articular surfaces to inspection.

Should one, if he be an advocate of the open operative treatment, operate on the day, or on the morrow, of the infliction of the injury, or should he wait until the soft tissues have somewhat recovered from the immediate effects of the traumatism?

In looking over the literature of the subject, it will be noted that there is great diversity of practice as to the length of time allowed to elapse between the occurrence of the injury and the performance of the reparative operation. In the treatment of compound fractures of the patella, delay is injudicious. An early attempt should be made to remove or to counteract what infection has been implanted in the tissues, and adequate measures should be taken, having in view the protection of the tissues and of the articulation from septic contamination.

In all compound fractures of the patella, the time allowed to elapse between the injury and the operative intervention should be the shortest consistent with the modern surgical preparation of the operative field.

It has been our practice in fresh subcutaneous fractures of the patella, to defer operation for from three to five days after the injury, being guided some-

what by the patient's general condition and also by the evidences of local trauma. The congestion and inflammatory exudate consecutive to the injury have usually by this time begun to retrogress. Our results having been satisfactory, we are averse to change.

The time interval between the day of injury and the day of operation enables the surgeon to become better acquainted with the patient's general condition, to better familiarize himself with the type of fracture which confronts him, and to better asepticize his operative field. Owing to the wrinkled, thickened nature of the skin of the front of the knee, its surgical purification presents some difficulty.

What we consider indispensable, what we consider of paramount importance, is the surgical preparation of the operative field. During the entire pre-operative interval, all flexion of the leg on the thigh is prevented by a posterior, moulded plaster-of-Paris splint, which maintains the thigh slightly flexed on the abdomen and the leg fully extended on the thigh. The elevation of the limb relaxes the rectus femoris muscle. The latter, by virtue of its origin above the hip joint, has a tendency to draw the upper fragment upwards. By compression exerted either by gauze or by elastic bandages, an endeavor is made to aid and to hasten the absorption of the intra- and extra-articular effusion. In operating these cases, we always use rubber gloves.

Should the operative field be rendered bloodless by the employment of an Esmarch bandage? What should be the nature of the anæsthetic employed? Local, lumbar, or general anæsthesia?

As a prophylactic measure against hæmorrhage, or as an aid to secure a bloodless operative field, it is rare for surgeons to make use of the Esmarch bandage, or band, in their operations for fractured patellæ. Thienger⁴¹ and Oehlecker⁴² employ it. Its general non-use is evidence enough that clinicians do not consider it of any great assistance in these cases.

The Esmarch's band, applied according to the ordinary rule, interferes, while in position, with the normal elasticity of individual muscles and of muscle groups, may hinder the bringing down, the pulling down, of the extensor muscles of the thigh, and consequently render difficult the approximation of the patellar fragments. The oozing into the articulation and tissues that follows its use is another undesirable feature attending its employment. We know of no valid reason for its preliminary use in operations for fractured patellæ.

Chaput, Lotheisen, and Stimson have each with success, operated fractured patellæ under local anæsthesia. Chaput and Stimson used cocaine; Lotheisen employed Schleich's infiltration method. Ranzi in one case resorted to anæsthesia obtained by lumbar puncture and spinal subarachnoid injection. Mikulicz in several cases used lumbar spinal anæsthesia. In one case Mayer also resorted to lumbar anæsthesia.

In Chicago, in operations of this nature, in the absence of contra-indications, we almost invariably use general anæsthesia. General anæsthesia enables the operator to more thoroughly protect the patient from pain, to better guard against accidental septic contamination, to secure a more complete muscular

relaxation, to proceed more deliberately, to modify his procedure so as to better adapt it to the needs of the case at hand.

By what type of incision is the operator best enabled to perform the repair work which he deems appropriate and necessary?

Large, methodically carried out incisions are infinitely less dangerous than small openings. The latter fail to fully expose the operative field, do not enable the operator to satisfactorily cleanse the joint and do not facilitate the careful repair of the lateral capsular and aponeurotic tears.

In operating for fractured patella I generally employ for the exposure of the parts, a flap having its convexity downwards. The incision commences on a level with the upper margin of the patella, about one inch to one side, from here it passes downwards to a point a little below the apex of the bone, from where it is continued across the limb, and carried to a point corresponding to that from which it started. This incision does not interfere in any way with healing. Jacobson and Rowlands.⁴³ It is thought that an incision with the convexity downwards, better secures the vitality of the flap than one with the convexity upwards.

These convex incisions afford a good exposure of the parts, facilitate the removal of intra- and extra-articular exudates and extravasates, give good access to the bony fragments and allow of careful repair of all capsular pre- and parapatellar tears. If drainage of the periarticular tissues is necessary, it is easily secured. With a longitudinal incision, drainage is somewhat difficult.

Is it advisable in these cases to irrigate the articulation; if so, with what fluid, an antiseptic solution, irritating or non-irritating, or merely a bland, non-irritating cleansing agent, such as normal salt solution; or is the mere sponging out from the synovial cavity of the extravasated liquid and clotted blood, productive of the most satisfactory results?

Joint irrigation with irritating antiseptics, such as carbolic acid and bichloride of mercury, we condemn. Any agent acting as an irritant upon joint endothelium, lowers its resistance to infection, predisposes it to inflammation. In flushings or irrigations of the joint cavities with normal salt solution, which solution is in itself unobjectionable, we fail to see much value. Of what advantage can it be to waterlog the tissues?

In operations interesting the pleural cavity, we do not irrigate that chamber to secure the outflow of any effusion collected in the pleural space. To accomplish this, reliance is placed upon the elasticity of the chest wall, the inspiratory expansion of the lung, the ascent of the diaphragm and the use of a drainage tube. In operations upon the peritoneal cavity, we do not flush this space to remove contained exudates and extravasates; we simply gently swab and mop.

In arthrotomy for fractured patellæ, we do not irrigate either the joint or the surrounding tissues. All liquid and clotted blood are removed by gauze swabs mounted on artery forceps. The sub-quadricipital synovial *cul-de-sac* is not overlooked, and all liquid and clotted blood therein contained is removed. The swabbing is done with great gentleness, the object being to minimize the trauma inflicted.

Should non-absorbable or absorbable suture material be used? Are there any valid reasons for discarding non-absorbable suture material?

We refer here only to buried or irremovable suture material. If the suture material be so inserted as to be removable, once organic reunion of the divided tissues has taken place, it matters little (owing to the removability of the suture material) whether absorbable or non-absorbable material be employed. For instance, Vallas⁴⁴ and others, lacking confidence in the tensile strength of catgut, doubtful of the adequate sterilization of the same, and also being unwilling to abandon foreign material in the body tissues, for the approximation of the divided tissues make use of removable metallic sutures.

In operations for fractured patellæ, buried sutures of absorbable and non-absorbable material have been and still are used.

We consider it unwise to abandon non-absorbable suture material permanently in the articulation or in the periarticular tissues, because:—

a. Clinical observation has shown that metallic sutures frequently irritate the tissues, lower their vitality, increase chances of infection and may require subsequent removal.

Metallic sutures may become loosened, may break, and fragments escape into the articular cavity, by which they are poorly tolerated. In one case, reported by Ranzi, three portions of wire escaped into the articulation.

The embedding of wire sutures in the patella does not add to the solidity of the patella.

Non-absorbable sutures, be they inserted transversely or sagittally, cannot be considered permanent splints.

Von Brunn, as a résumé of his investigations, came to the following conclusions:—

Silver wire has not sufficient resistance to guarantee bony union of the fragments.

Even when the fragments have healed together, the wire may break.

Parts of the broken wire may wander into the articulation, or into the periarticular tissues and can excite disturbances at point of lodgment. It has been claimed by Thiem, etc., that metallic sutures suggestively hinder in some patients, the cure of the subjective troubles.

Shall completely detached bony fragments be removed? If completely detached bony fragments be present, their removal is one of the essential steps of the operation. It has been repeatedly done, and satisfactory results have ensued. The escape into the articulation of completely detached patellar fragments and their non-removal therefrom, leads to all the functional and anatomical articular disturbances inseparably associated with mobile foreign-joint bodies.

Shall the periarticular tissues be drained?

In clean cases, subcutaneous drainage is needless. Its employment serves no useful purpose. It retards the healing of the skin wound. Why complicate an operative procedure by a useless step?

Shall the articular cavity be drained? In simple fractures, no. In compound fractures, yes. In non-infected cases, if the operator has conducted an

aseptic operation and if the hemostasis of the operative wound is satisfactory, drainage is superfluous, is more harmful than helpful. In compound fractures, we are dealing with presumably infected wounds (in fact all wounds not inflicted by the surgeon must be so considered), therefore, in them, drainage, from the standpoint of prophylaxis, meets an indication.

The modern tendency is to employ drainage only in the presence of absolute indications; and to discard it, when in doubt, as to its utility in the case at hand. When unneeded, drainage instead of contributing to rapid aseptic healing, has a tendency to act as an irritant. In the etiology of inflammation, irritants are considered predisposing and exciting factors. We have not as yet operated on a case of subcutaneous fracture of the patella in which we have either drained the articular cavity or the periarticular tissues.

What should be the duration and the nature of the post-operative treatment? As yet, the practice of the different operators as to nature and duration of post-operative treatment is most dissimilar. We proceed as follows: Immediately after the operative procedure and the application of the protective dressing to the wound and while the patient is still anæsthetized, moulded plaster-of-Paris splint is applied to the injured extremity. This splint should be amply padded, should cover the posterior and lateral surfaces of the limb and should extend from about 10 centimeters above the external malleolus to the gluteal fold. The object of this splint is to immobilize the extremity in the position of full extension of the leg on the thigh, and of slight flexion of the thigh on the abdomen. The slight flexion of the thigh on the pelvis has for its purpose the relaxation of the rectus femoris muscle. During the patient's confinement to bed attention must be given to the heel and to the toes. So as to avoid the development of a pressure-sore upon former, the heel should be protected by a doughnut pad or other means. By the use of a "cradle" the toes will not be subjected to the weight of the bedclothes and talipes decubitus will not ensue. In the absence of a marked elevation of temperature, of intense pain, of saturation of the dressings, the protective gauze dressings on the joint remain undisturbed for from 10 to 15 days, then, if indicated, the removable sutures are ablated. The immobilizing splint is kept in position for about a month. As to the duration of immobilization, the practice of the various operators is far from being in accord. Rigby allows his patients out of bed on the fourteenth day. Quénu does not allow them to leave their bed before the twenty-fifth day. Lucas-Championnière considers prolonged immobilization a "detestable method." Lejars suppresses all immobilization on about the tenth day after the operation. Moullin allows patients to start walking during the third week. Berger begins mobilization of the knee on the fifteenth, eighteenth, twentieth or twenty-fifth day. Schwartz does not allow flexion of the knee previous to the twenty-fifth day. The first motions of the patella should be lateral motions. We do not begin flexion of the leg upon the thigh previous to the expiration of one month from the day of the operation. The first attempts at flexion should be cautiously made. With use, the range of motion gradually increases; in many cases the restoration of joint function is

complete. When flexion to a right angle, has been recovered, the patient is discharged from further observation.

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Editorial

ALCOHOL AND ITS EFFECTS

THE subject of the alcoholic problem and the diseases associated and following from its use, its influence, means of treatment and possibilities of restoration and prevention have been well covered in the papers read at the semi-annual meeting of the American Society for the Study of Alcohol and Other Drug Narcotics, held at Washington, D. C., March, 1909.

These papers are exceedingly valuable owing to the fact that they supply authoritative conclusions and facts from the latest medical studies that are unquestionable.

Dr. H. J. Berkley has recently studied the lesions of the nerve-cells and vascular tissues produced by acute experimental alcoholic poisoning. He concludes that in acute alcoholic poisoning, the stress of the action of the drug falls upon the nervous elements of the brain. The involvement of the nerve elements is more gradual than that of the mesoblastic tissues and only becomes noticeable by present methods of staining and examination after the lymphatic channels are choked with the detritus of the white blood-corpuscles and other cellular elements. The deteriorative action of ethyl alcohol on the nerve-cell is apparent, and when prolonged in more moderate doses produces well-defined cellular changes as is evidenced by nucleolar and dendritic changes. In its action upon the nervous tissues ethyl alcohol may be likened to certain other poisons, such as ricin and toxalbumins. The administration of these toxins causes the same departures from the normal in the nerve elements, but the alcohol has a much greater destructive effect upon the white blood-cells as well as the cells composing the blood-vessel wall. The effect of the drug is detrimental in the quantity administered to the animal as well as to the duration of its poisonous action before death ensues. Limited quantities continued over a considerable time accomplish, in a modified form, the same destructive result as higher doses acting during a few days.

The continued use of alcohol even in a moderate measure may injure the nerve-tissues and be deleterious to health, and one of the commonest things

in society is that people are injured without being drunkards. It goes on so quietly that it is difficult to observe even though it leads to degeneration of the tissues and spoils the health and intellect. There is an affiliation of disorders arising from excess of drink, beginning at the liver and the blood and proceeding to the lungs, heart, brain and kidneys. It is estimated that twenty per cent. of the insane owe their insanity directly or indirectly to alcohol, and it has also been estimated that alcohol is the direct and indirect cause of from ten to twenty per cent. of all deaths.

Dr. Webster finds that diseases due to alcohol alone are: acute alcoholic poisoning, acute mania, delirium tremens, chronic alcoholic poisoning, alcoholic insanity, alcoholic epilepsy and alcoholic neuritis. Diseases of which alcohol is frequently a contributing cause are: pharyngitis, gastritis, chronic dyspepsia, dilatation of the stomach, congestion of the liver, cirrhosis of the liver, fatty liver, chronic Bright's disease, gout, glycosuria, obesity, congestion and overgrowths of the glands and skin, functional disorders of the ovaries and breasts leading to a sterility and inability of the mothers to suckle their infants, dilatation of the heart, fatty heart, arteriosclerosis, increased susceptibility to inflammatory diseases of the eyes, inflammation and degeneration of nerve structures including the optic nerve, epilepsy, melancholia dementia, imbecility, hysteria, idiocy, and sunstroke.

It is the altered habits of the present generation that account in a great measure for their being less tolerant of alcohol than their forefathers.

With regard to its direct action or immediate action on the parts with which it first comes in contact when swallowed, it is well known that alcohol taken internally in a concentrated form, such as distilled spirits, acts as a powerful irritant and tends not only to injure the mucous membrane of the œsophagus and stomach, but also when digestion is going on to arrest it, by altering the properties of the digestive principle which at such times is present in the stomach. Alcohol has no value as an aid to digestion in persons who are suffering from slow digestion. It is non-efficient as a food, a most awful wasteful substance.

Its detrimental effects can be readily seen in the liver, kidneys and stomach of drunkards and also in more delicate changes of the elements revealed by the microscope, where the quantity taken had been even a small one. A physiological examination proves always beyond a doubt that when alcohol has been taken, there are changes in the body substances, not always indeed wholly proportionate to the quantity taken, because the living element has more or less power to resist its action. Experiments by Chittenden show most conclusively that alcohol even in very small doses, interferes seriously with the digestive activity of the gastric juice which is already of inferior quality.

It has been concluded by Dr. Hall in the laboratory researches of the last three years, that alcohol is a waste-product of tissue metabolism, producing a toxic effect on living substance. In common with other toxic substances it is oxidized in the body, which oxidation is a means of defence, as the products are far less injurious than the alcohol. Because of this defensive oxidation of alcohol, which takes place largely in the liver, the ingestion of more than a

slight amount of that substance makes the body more liable to other toxic invasion. Alcohol cannot be considered a food. It decreases the efficiency of the muscles, glands and nervous system. It is a narcotic in its drug action and in lower animals impairs fecundity when given in minute quantities.

Materia Medica and Therapeutics

ACETONE TREATMENT OF INOPERABLE CARCINOMA.

D. W. Tovey gives the results of treatment of 15 cases of inoperable carcinoma of the uterus by means of acetone. This is of value only in inoperable cases, and does not give a permanent cure, but ameliorates the chief symptoms and makes the life of the patient endurable. The terrible odor, discharge, and hæmorrhages are all relieved, and when they return the treatment can be given again without harm. The hæmorrhages, septic absorption, and odor are all stopped. Acetone is a hardening agent for tissues, and hardens the living carcinoma tissue as well as pathological specimens. The treatment is preceded by a thorough curetting under ether. The solution is then poured into the crater left through a conical speculum, which prevents it reaching the normal vaginal tissues. If it reaches the vulva or perineum it produces a severe burning sensation. When the hardened tissues have been separated and discharge begins again the treatment may be repeated without ether. The hips must be elevated while the drug is in the cervix, and the excess is drained off carefully through the speculum. A tampon is put in place to take up the excess of liquid. The walls of the cavity become smooth and firm. Pain from extension of the cancer is not relieved. The author gives histories of 8 cases in which marked relief was obtained, continuing up to the time of death, from the general

infection. (Medical Record, November 6, 1909.)

ALCOHOL COMPRESSES IN TYPHOID FEVER.

Dr. Cheinisse protests against the routine use of the cold tub-bath in typhoid fever without individualizing, especially for children. The lifting of the patient is liable to do harm, while the action of the bath on the heart cannot be foreseen. Méry warns that the heart action must be closely supervised in children during the bath treatment, and in typhoid more than in any other disease. Cheinisse quotes Variot, Netter, Barbier and others who go still further and denounce the Brand method completely where children are concerned, on account of the frequency of cardiac complications in typhoid in children. Cheinisse regards the handling of the child in giving the baths as liable to favor hæmorrhage and perforation, the emaciated abdominal wall of the child affording comparatively slight protection. He prefers treatment with alcohol compresses applied to the abdomen and has never witnessed any inconveniences from them while the course of the disease was rendered milder, the heart was stimulated instead of depressed, and convalescence was hastened. A pad of absorbent cotton or gauze in eight thicknesses is wrung out of 85 per cent. alcohol (90 per cent. for adults), and applied to the abdomen and covered with a gauze compress or cotton pad wrung out of cold

water; over this there is an air-tight covering, the whole being held in place with a flannel band. The water compress is renewed every hour, the alcohol compress every two hours. He has applied this technic in twelve severe cases and has been much gratified with the result, the typhoid being modified into a milder form although no marked effect on the temperature was evident. These alcohol compresses were advocated originally by Salzwedel for phlegmons, and they have been used by Russian physicians and others in treatment of peritonitis and appendicitis with good results. Cheinisse quotes Meyer's report of the cure of tuberculous peritonitis by this means alone; the active hyperæmia induced attracts reserve forces to the disease focus, while the alcohol absorbed has a stimulating action on the heart. Last March Cheinisse witnessed the prompt recovery of a girl of 11 under the alcohol compresses which had evidently been effectual in transforming a severe typhoid with high fever and alarming nervous manifestations into a milder form, in which complete recovery ensued in a month. While in charge of this case he was called to see another child about the same age, with slight bronchitis, high fever and a little rumbling in the right iliac fossa. He diagnosed typhoid and ordered alcohol compresses. This diagnosis was not accepted by the family and another physician was called who confirmed the diagnosis of typhoid, but ordered Brand treatment which was applied. Cheinisse received an urgent summons ten days later and found the child suffering from perforation peritonitis to which he succumbed notwithstanding immediate removal to a hospital and operation. These two cases occurring simultaneously, one with a threatening onset but prompt recovery under the alcohol, the other com-

mencing mildly but terminating fatally under Brand treatment, have confirmed him in his advocacy of the local application of alcohol. (*Semaine medicale*, Nov. 17, 1909.)

CALCIUM SALTS IN GASTRIC TETANY.

Dr. Kinincutt, in the *American Journal of Medical Sciences*, reaches the following conclusions:

1. The rapid and controlling effect of the soluble calcium salts upon the tetanic symptoms.

2. The maintenance of this effect only by their continued use.

3. The comparatively slight effect of large infusions of salt solutions, used alone.

4. The slight influence, if any, of parathyroid preparations (nucleoproteid) given by the mouth in controlling the hyperexcitability of the nervous system. The effect of the nucleoproteid given subcutaneously cannot be estimated positively in the present instance, as it was given alone only during a period of twenty-four hours and when the tetanic symptoms had been controlled practically by the calcium salt. A distinct renewal of the spasm at the end of this interval led to the renewed use of the calcium salt in combination with the parathyroid material. The demonstration of the controlling influence of the soluble calcium salts upon the characteristic symptoms of at least one important variety of human spontaneous tetany—the tetany of gastrectasis, with stagnating stomach contents—suggests a probable similar therapeutic value of these salts in other forms of the disease in human beings.

5. The occurrence of typical tetanic spasm in a case of gastrectasis with parathyroid bodies of normal anatomical structure and, presumably, of normal

functioning power. (Medical Standard, December, 1909.)

ELECTRIC TEST FOR TRAUMATIC NEUROSIS.

Dr. Larat gives the tracings in seven cases of traumatic neuroses to show the peculiar electromuscular contractions which seem to be specific for traumatic nervous diseases and are not observed in any others. The response to galvanism is increased, the anodic closure contraction equaling or surpassing the cathodic closure contraction. In health the latter surpasses the former by two-thirds. The peaks in the tracings are not rounded as in the reaction of degeneration, but are sharp and angular as with normal contractions. The increased excitability is observed both on the affected and the sound side. These findings confirm the assumption that a traumatic neurosis is a general neuropathic disturbance of the nerve centers, not a local affection. (Presse medicale, Paris, Dec., 1909.)

FIBROLYSIN IN ANKYLOSIS.

Dr. K. Knotz has tried this drug in ankylosed joints secondary to rheumatic affections. The patients received no other treatment except hygienic and dietetic measures and warm sulphur baths, with later, active and passive movements. Several patients felt slightly exhausted on the day of injection, but objective symptoms were not found. The single dose was 2.3 cubic centimeters subcutaneously; in one case 6.9 cubic centimeters and the following day 4.6 cubic centimeters were given without untoward effects. The largest total amount was 117.3 cubic centimeters. One patient, aged thirteen, received 41.4 cubic centimeters, and another, aged seventy, received 20.7 cubic centimeters. Both were suffering from pronounced

vitium cordis. The only disagreeable symptom resulting was a slight inflammatory reaction at the site of injection, which rapidly disappeared with moist dressings. The results in general were very good, especially where the ankylosis was due to the presence of extra-articular connective tissue. Less improvement was seen in the presence of pus and where the etiology of the joint condition was gonorrhœa. It is also probable that with actual ossification little good will result from the use of fibrolysin. (Med. Klinik., 1909, No. 30.)

HIGH FREQUENCY CURRENTS IN MALIGNANT TUMORS.

Dr. J. A. Rivière, in *Ann. D'Electrobiologie et de Radiologie*, states that he used high-frequency currents on a wound that would not cicatrize, and which, after the treatment, healed in a few days. Since then he has used these currents under various forms. The apparatus of Oudin gave him great satisfaction. The author applied the current in a number of intractable maladies, especially tuberculosis and cancer. It exercises on superficial epitheliomas a cytolytic action, which is specific and elective, causing the elimination of the neoplastic tissues. It also causes the disappearance of the infected glands, and substitutes an abundant odorless discharge for the foul one of the ulcerated surfaces. The current is not painful, but on the contrary has an analgesic effect; the patients bear the applications well, and ask to have them continued longer. The application should never last longer than ten minutes. The author has never seen any bad effects from the current. Denuded surfaces are best affected by the treatment. Next are growths that are superficial. For internal growths little effect is possible on account of their depth. Opera-

tion must first be done and the current used later to promote cicatrization. The author believes that this current should be applied after all operations for malignant growths. (*American Journal of Obstetrics*, December, 1909.)

LATERAL ANASTOMOSIS IN INTUSSUSCEPTION.

Dr. Parry, in the *British Journal of Children's Diseases*, says that the method of treatment was said in the text-books to be only applicable to chronic cases. Two acute cases were referred to, one of Dr. Parry's and one of Dr. Rutherford's. On the tenth day in Dr. Parry's case, no trace of a tumor could be felt, and this was verified by examination. The author put forward, firstly, the simplicity and safety of the method as compared with excision; secondly, that an alternative line of treatment was afforded to that of severe manipulation in irreducible intussusception; and thirdly, the disappearance of the tumor. Dr. H. Stiles said the paper was a landmark in the treatment of irreducible intussusception. He had become pessimistic on the subject. Patients had died after resection where he thought recovery would take place. He had been agreeably surprised that a good many cases had recovered where there had been extreme difficulty in reducing the intussusception, and even after splitting the peritoneal coat. The gangrenous cases were very difficult, and his only criticism of the paper was that the treatment was hardly applicable to those. He had had better results when he operated as quickly as possible, and though the children often looked moribund it was wonderful, if the treatment was properly carried out—no drugs and plenty of saline by the bowel—how they recovered. Once they had got over the shock he was no longer anxious about

them. (*The Charlotte Med. Jour.*, December, 1909.)

NARCOSIS AND LECITHIN.

At present the most generally accepted theory concerning the action of narcotics is that they are taken up by the lipoid substances of the brain, with which they form a solution. If the blood be examined during narcosis, it will be found that there is a considerable increase in fat, which is probably Nature's method of keeping the poison away from the vital organs. Dr. S. Nerking has tried to paralyze the toxic action of the narcotic by means of intravenous injections of lecithin. Rabbits can be narcotized easily by means of intravenous injections of urethane, but if the same amount is injected with a one-per-cent. lecithin emulsion the urethane will lose its action, as it combines with the lecithin, and thus will not reach the lipoids of the brain. The same results were obtained with ether, chloroform, morphine, morphine-scopolamine, chloral hydrate, novocaine, and stovaine in dogs, rabbits and rats. The lecithin shortens the anæsthesia and diminishes the after-effects, hence it is recommended that it also be tried on man. (*Muench. med. Woch.*, 1909, No. 29.)

PERHYDROL IN EAR SUPPURATIONS.

Dr. M. Bresgen has used a 2 to 6 per cent. solution of perhydrol for old suppurations of the middle ear, and finds that in many cases an operation can be avoided. The patient drops the solution into the ear and remains on the side for 10 minutes; the auricle is then dried and a piece of cotton inserted into the meatus. Where there is much suppuration the procedure is repeated morning and night. It is surprising how frequently large masses of inspissated pus will be dislodged by the

solution. In severe cases the patients are treated until no more effervescence occurs. Cases of cholesteatoma also yield, and where granulations are present, alcohol, as a rule is not necessary. (Therap. Rundsch, No. 41, 1909.)

SALINE INFUSION AS AN AID TO PROGNOSIS IN PERITONITIS.

Dr. Lichtenberg states that in peritonitis the degree and permanence of the improvement in the circulation following intravenous saline infusion is a reliable index for the amount of vasomotor paralysis. In health, saline infusion causes only slight and transient changes in the blood-pressure but when the vascular tonicity is reduced saline infusion improves conditions and the effect persists in proportion to the recuperative power of the vessels. Saline infusion before the operation is thus useful from several points of view, improving conditions for the operation and also revealing the extent of the paralysis of the vasomotors. Addition of a little suprarenal extract magnifies the effect. If the infusion causes no improvement in the conditions in the circulation little benefit, he asserts, can be anticipated from the operation. (Münch. med. Woch., Nov. 30, 1909.)

STRICTURE OF URETHRA, TREATMENT OF.

Dr. Cabot states that with the patient in the lithotomy position, a free median incision is made down to the urethra, dividing the structures of the bulb in the median line and turning them aside. The stricture is then divided by a longitudinal incision about one and one-half inches in length. All excess of scar tissue should be removed, the whole stric-

tured position excised if necessary, and hemostasis obtained. The anterior segment of the urethra is then freely mobilized by separating the corpus spongiosum from its attachments until it can be joined to the posterior segment without tension. If it is necessary to divide the urethra completely, suturing should be begun on the roof, the sutures being passed from without inward, including all the structures of the corpus spongiosum and the urethra. When it has been found possible to leave the roof of the canal intact, suturing is begun at the sides in such a way that the longitudinal incision in the urethra is brought together transversely, somewhat after the method of pyloroplasty. After about one-third of the circumference of the canal has been sutured, a No. 28 sound is passed into the urethra and the suture is completed about this so as to be sure that the canal is given full caliber.

The last suture closing the wound unites the two extremities of the longitudinal incision in the urethra, and by lengthening this incision the caliber can be increased to any reasonable extent. Next, the urethra is opened on the sound at a point as far behind the stricture as possible, and just sufficient to admit a No. 12 (English) soft rubber catheter. The wound is then sutured in layers, bringing together the muscular structures of the bulb as accurately as possible with interrupted sutures and the skin is closed, except for a point at the lower angle through which the catheter is brought out. Resection is said to be applicable to all strictures of the bulbomembranous portion of the urethra not amenable to gradual dilatation and not complicated by infiltration of urine or fistulas. (Boston Medical and Surgical Journal, Dec. 9, 1909.)

STYPTOL IN NOCTURNAL EMISSIONS.

Dr. Jos. Koenig states that discharges will diminish in frequency, no matter whether they occurred almost every night or even several times a night, to about once a week, if 40 to 60 drops of the extract of hydrastis are taken before retiring.

Within the last year the author has tried styptol, the phthalate of cotarnine, arguing that drugs which will contract the vessels of the uterus will show an analogous action upon the utriculus masculinus and the excretory ducts of the seminal vesicle.

He was not disappointed in his expectations. No matter how frequent the nightly losses were, the intervals could be lengthened to from one to three weeks. At the same time there was a distinct lowering of the sexual hyper-excitability, where present.

He administers first two, later three, styptol tablets, $\frac{3}{4}$ Gm. each, shortly before retiring, for a month, to be repeated at longer intervals, if necessary. (Wiener klin. Woch., No. 37, 1909.)

SUPRARENIN AND ITS USES.

Dr. Braun in the Zeit. f. Gyn., comments on two cases of fatality as a result of the use of suprarenin injected into the cervix for operative purposes. The author and other surgeons and dentists have made use of this drug in thousands of cases for local anæsthesia, combined with other drugs and have experienced no bad effects. As to the cause of the fatal cases and the poisonous dose of the drug, he states that there is no fixed poisonous amount of this drug; this varies with the individual, and with the way in which it is used. The author uses a very weak solution injected in considerable amount. He believes that it is not the amount of the drug or of the

solution used, but the concentration of the solution that does harm. A large amount of a weak solution can be used without danger, while a small amount of a strong solution will be fatal. The method in which the material is introduced is also of importance. Injected intravenously it will have an immediate bad effect, while applied locally or subcutaneously it will be well borne. The author combines it with a one-half-per-cent. solution of novocaine to 100 cubic centimeters of this solution he adds 0.64 grams of borate of suprarenin. The drugs are made up into a tablet and the solution made freshly for each operation. He has no fear of using as much as 125 cubic centimeters of this solution for an operation. (American Journal of Obstetrics, 1909.)

SURGICAL TREATMENT OF EPILEPSY.

Prof. Tilmann maintains the view that operation should be done in every case of epilepsy in which there is a history of injury of the skull or brain. Exploratory trephining should no longer be considered as a dangerous procedure. Of eleven cases operated upon by him, four were genuine and seven surgical epilepsy (four injuries of the central region, two gunshot wounds, one bony new growth of the frontal bone). In six cases cysts were found in two instances and cicatrices in four, all of which were adherent to the brain, so that a portion of the cortical substance had to be removed. In all eleven cases there was present an œdematous condition of the pia mater. The author considers this œdema of significance, and believes that it is due to a chronic inflammation of the pia mater, which, perhaps, gives rise to the epileptic attacks. In all these cases, including six of genuine epilepsy, an improvement occurred

after the removal of the cedematous fluid. With the exception of three cases in which the attacks returned after three or four months and one in which a physical epilepsy developed, the rest remained free from recurrences, but the time of observation had been too short to permit of their being considered cured. (Münch. Med. Wochensch., No. 32, 1909.)

Book Reviews

SPECIFIC DIAGNOSIS AND SPECIFIC MEDICATION. By John William Fyfe, M.D. An entirely New Work Based on the Writings of the late John M. Scudder, with Extensive Extracts from Other Eclectic Authors. Octavo, 782 Pages. Cloth, \$5.00. Law Sheep, \$6.00. Cincinnati, Ohio: The Scudder Brothers Company, Publishers.

The author has incorporated within this volume a work based on the writings of Dr. Scudder and more recent authors, including his own personal observations. The book is divided into two parts: Part I, "Specific Diagnosis;" Part II, "Specific Medication."

The first part considers chapters on "Normal Life," "Cultivation of Senses," "Classification of Diseases," "Methods of Diagnosis," "Diagnosis from a Physiological Standard," "Diagnosis by the Senses of Sight, Hearing and Touch," "Physical Diagnosis." The second part deals with the "Theory and Practice of Specific Medication" and of "Remedies and Their Uses."

The work is extremely valuable in that it brings together the great advancements which have been made during the past third of a century in the eclectic methods of practice. The methods employed are accurately described and cover the ground dealt with thoroughly. All the subjects discussed are skilfully handled.

THE GOUTY STATE; ITS MODERN PATHOLOGY AND TREATMENT. According to Professor Albert Robin, Dieulafoy, Fauvel, Le Gendre, Sir Dyce Duckworth, Arthur P. Luff, Bryce, Wiechowski, Cathcart, Kennaway, Leathes, Wirgmann, Gore, Goodhart, S. West, Burian, P. Kidd, Keefe, Carnot, Falkenstein, Kionka, C. G. Gordon, G. Bannatyne, Walker Hall, Schoenjahnn, Dixon and Malden, Bain, Prevost, J. E. McCracken, Watson, Schur, Burgsch and Schittenhelm, Block, etc. Price, 25 Cents. Copyrighted 1909 by W. J. Morrison, Publisher, 43 Broad Street, New York.

This small pamphlet of forty-seven pages reviews the present-day knowledge of gout in relation to its modern pathology and treatment. It presents the work of those who have had a great deal of personal experience in this field and whose original work and research are apparent.

One may not agree with all that is said, but the authors have well considered and presented their view.

This pamphlet is indeed a valuable contribution to our knowledge of gout. All the common conditions are mentioned and well treated.

THE PREVENTION AND TREATMENT OF ABORTION. By Frederick J. Taussig, A.B., M.D., Lecturer in Gynecology, Medical Department, Washington University; Obstetrician to the St. Louis Maternity Hospital; Gynecologist to the St. Louis Skin and Cancer Hospital; Fellow of the American Gynecological Society, and American Association of Anatomists. Fifty-nine Illustrations. St. Louis: C. V. Mosby Company, 1910.

As stated in the preface this book is addressed primarily to the general practitioner. to whose lot it falls to treat the vast majority of abortions.

This volume is the result of the author's studies and personal observations that have occurred in the advancement of this field of obstetrics. It is an excellent, clear exposition of the principles underlying the cause, prevention and treatment of the pre-viable expulsion of the ovum. It is clear, concise, well-written, and the differential diagnoses, as well as the diagnosis, are very carefully considered. The author not only covers the prevention and treatment, but he also presents other admirable chapters upon the anatomy, pathology and etiology of this condition.

The volume concludes with chapters on: "Missed Abortion," "Mole Pregnancy," "Therapeutic Abortion," and "Ergot and Its Preparations."

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Original Articles

CEREBROSPINAL MENINGITIS IN AN INFANT TWO MONTHS OLD. DIAGNOSIS MADE BY TAPPING THE LATERAL VENTRICLES. TREATMENT BY INTRAVENTRICULAR INJECTIONS OF FLEXNER'S ANTIMENINGITIS SERUM. RECOVERY.*

By LOUIS FISCHER, M.D.,

Attending Physician to the Children's Wards of the Sydenham Hospital, and to
the Riverside and Willard Parker Hospitals, etc.

NEW YORK CITY.

THE success obtained by many clinical observers in the treatment of cerebrospinal meningitis by using the subdural method of injection is so well known that it hardly needs repetition.

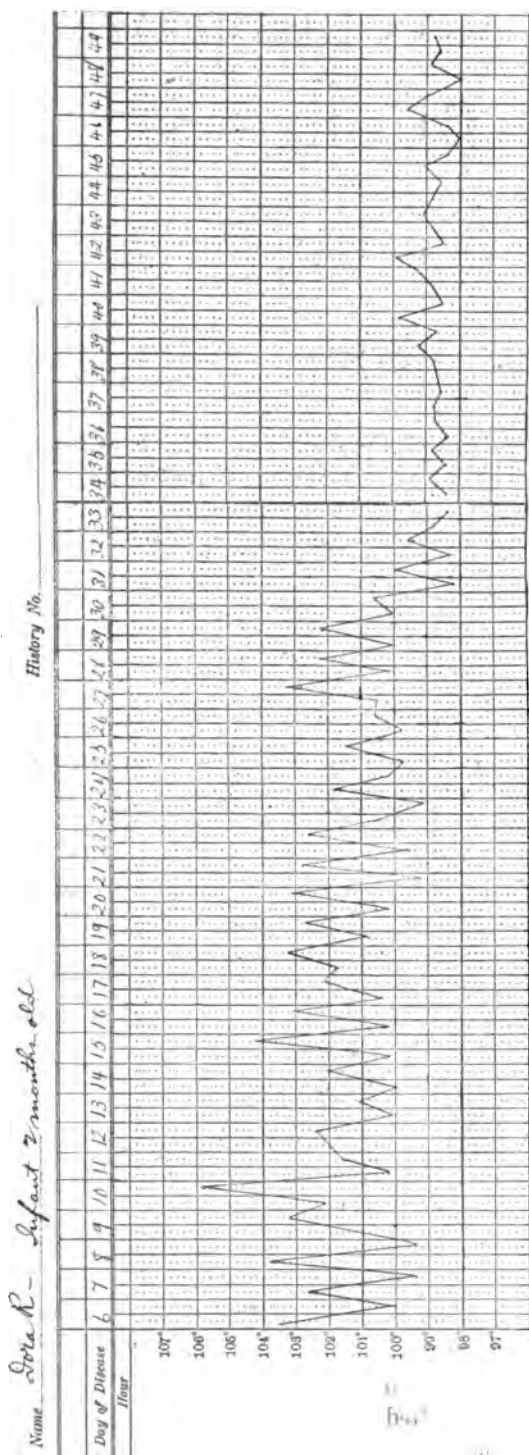
Many papers have appeared both in this country and in Europe attesting to the specific virtues of Flexner's antimeningitis serum in positive cases, when used early by the intraspinal method. The intraventricular method, however, has not so far proven successful in the cases reported by Cushing, Netter and others. The following case of an infant, considered hopeless for three weeks, which made a brilliant recovery without any complication, treated by the intraventricular method, will therefore prove of clinical interest.

Dora R., 2 months old, was admitted to the Sydenham Hospital, October 2, 1909. Infant born at full term, normal delivery. No forceps. Breast-fed since birth. Until three days before admission to hospital had never been ill.

On September 29th, vomiting, anorexia and gastric discomfort were noted. A laxative relieved these symptoms, but on October 1st, the mother noticed twitching of the arms, stiffening of the muscles of the neck, rolling of the eyeballs, restlessness, insomnia, and sudden piercing cry as though in pain.

On the following day the infant was admitted to the hospital. There was complete rigidity of the body for ten minutes, then a relaxation. The eyeballs rolled upward, the neck, arms and legs were rigid, and the infant

* Read before the Section on Pediatrics, New York Academy of Medicine, March 10, 1910.



24th. Lateral ventricles aspirated, and 25 cubic centimeters serum injected.
 25th. Right lateral ventricle aspirated and 20 cubic centimeters serum injected.
 27th. Intraspinal injection of 20-25 cubic centimeters serum.
 29th. 15 cubic centimeters serum injected into ventricles.

cried. During one of these spasmodic attacks the mouth remained wide open. No cardiac nor pulmonary symptoms were noted.

Chief Symptoms.—Sudden onset with vomiting. Loss of appetite in an otherwise normal breast-fed infant, with rigidity of head and neck, rigidity of extremities and convulsive movements. Anterior fontanelle open one-half inch in diameter, slightly bulging. Posterior fontanelle almost closed. Eyes: pupils equal, and reacted sluggishly to accommodation and to light.

October 2d. A lumbar puncture was performed and 1 cubic centimeter of turbid blood-tinged fluid withdrawn. The fluid was examined microscopically for the meningococcus with negative result.

On October 7th, 10th and 18th, each, a lumbar puncture res^t ; in dry tap was mad^e. as we had three successive dry taps and the symptoms of rigidity, opisthotonus, fever, and twitching were marked, I concluded, on October 20th, to tap the infant's lateral ventricles. About 15 cubic centimeters of turbid fluid containing pus were withdrawn from right ventricle. Smears made showed intracellular Gram-negative meningococci (Corroborated by pus cultures at the Rockefeller Institute). The ven-

tricles were then irrigated with normal saline solution at a temperature of about 105° F. The excess of fluid was allowed to drain out through the needle, and 25 cubic centimeters of antimeningitis serum were slowly injected into the ventricles. During the injection of the serum the infant changed in color from a waxy pallor to a uniform red flush all over the body. One-half hour after the injection of the serum the infant still remained flushed, perspired profusely, and had some frothing at the mouth; otherwise, the general condition was very good. The temperature was 101° F., respiration, 80, and pulse, 120.

October 21st. The ventricles were again irrigated with 40 cubic centimeters of normal saline solution, and 20 cubic centimeters of Flexner's serum were injected. The fluid withdrawn contained numerous meningococci.

October 22d. The child's general condition was very poor. Opisthotonus was marked, the body rigidly bent in the form of a bow. The arms were rigidly extended and the palms turned outward. Occasionally the infant flexed the arms and legs at elbow and knee. The infant made no sound but lay quiet although not asleep. When a strong light was held in front of the face, the pupils, which were dilated, contracted quickly. The eyelids were likewise closed when the light was held too near. Perspiration was free, especially on the face. Upon the slightest disturbance, such as a light touch with a pencil, the infant went into a paroxysm of muscular contraction involving all its limbs; later these contractions occurred even without external irritation every few minutes. The pulse became rapid (about 140), but regular and of good tension, fair size and of good volume.

October 23d. A lumbar puncture performed in the fourth lumbar interspace resulted in a dry tap. A second needle was then inserted in the third interspace, the first needle being allowed to remain *in situ*. Through the second needle, 15 cubic centimeters of Flexner's serum were injected, about 3 cubic centimeters of which returned through the first needle. Then 15 cubic centimeters were injected through the first needle, about 5 cubic centimeters of which returned through the second needle, thus proving that both needles were in the canal, and that there was a clear passage from one needle to the other. In all the infant retained in its spinal canal 20 to 25 cubic centimeters of serum.

A better result seemed to be obtained when the disease was attacked by the intraventricular injections, and at the same time the serum was injected into the spinal canal. By this means the serum came into direct contact with the affected parts and exerted a marked beneficial effect.

October 25th. Lumbar puncture resulted in the withdrawal of 5 cubic centimeters of slightly cloudy, light amber fluid. The fluid looked as though it were colored by the Flexner serum previously injected; no meningococci were found. Fifteen cubic centimeters serum were then injected into the spinal canal.

October 27th. Twenty cubic centimeters serum were injected into the ventricles although no ventricular fluid could be withdrawn.

October 28th. Lumbar puncture resulted in dry tap. Total amount of Flexner serum injected was 100 to 105 cubic centimeters.

October 31st. The temperature has been normal for three days, the general condition good. The pulse regular, of good quality as to volume and tension, although slightly more rapid than normal. Nurses eagerly and retains all its feedings. Opisthotonus still marked and there was some rigidity of arms and hands, but the general hyperæsthesia was markedly diminished although still present. Pupillary light reflex was present and not sluggish. The corneal reflex was present. The *tache cérébrale* was present but greatly diminished. The Babinski reflex was present, also the Oppenheimer reflex. The rigidity of the neck was not so marked, and occasionally the infant would move its head from side to side. At times it would follow a bright object with its eyes.

November 2d. There was a slight McEwen present over right convexity.

November 4th. McEwen still present. The opisthotonus and rigidity much less marked when child lies quiet and while nursing. On being handled the opisthotonus becomes very evident.

November 9th. The infant gave evidence of hearing. The fundus of each eye was examined ophthalmoscopically and found normal in every respect.

November 20th. Lumbar puncture resulted in dry tap.

November 22d. Right lateral ventricle aspirated and 50 cubic centimeters of clear fluid withdrawn. No meningococci found. The fluid resembled hydrocephalic fluid.

BLOOD-COUNT.

Date	Leucocytes	Polynuclear Neutrophiles	Lymphocytes	Eosinophiles
October 5	13,400	31 per cent.	69 per cent.
October 13	15,600	61 " "	39 " "
October 22, before injection .	17,200	31 " "	69 " "
" " after injection...	11,400	88 " "	12 " "
October 26, before injection .	10,200	65 " "	32 " "	3 per cent.
" " after injection...	11,600	70 " "	29 " "	1 " "
October 27	10,000	64 " "	31 " "	5 " "
October 28	13,800	71 " "	24 " "	5 " "
October 30	10,800	68 " "	32 " "
November 29	8,500	66 " "	31 " "	3 " "
December 9	9,000	60 " "	37 " "	3 " "

Dr. E. Levy¹ reports a series of cases treated by meningococcus serum made according to Wassermann and Bruck at the Royal Institute for infectious diseases in Berlin. They advise the injection of 5 cubic centimeters for older children, 10 cubic centimeters to be repeated the following two days if no improvement is noted. It is injected subcutaneously or following a lumbar puncture. When hydrocephalus or severe symptoms of intracranial pressure exist, then the subcutaneous method is preferred.

Levy's conclusions, based on 17 patients treated by the intraspinal method, were: That the subcutaneous method of injection is far less efficacious than the intraspinal method; that he has noted specific results therefrom, and that he has seen no bad after-effects.

Krohne² describes an epidemic of cerebrospinal meningitis in which 135 cases were injected with serum and 70 recovered: a mortality of 47.6 per cent. In a series of cases treated by the Wassermann serum in Berlin the mortality was 35.5 per cent. In the Jochmann from Merck, the series of cases gave a mortality of 58 per cent. The injections were made subcutaneously in the thorax or thigh in 50 cases, whereas intraspinal injections in 59 cases were given. No intracranial injections were reported.

Jochmann³ reports a series of 17 patients. Five died, among the latter three children with severe hydrocephalus. This author advises the subcutaneous injection of 20 cubic centimeters of his anti-meningitis serum, or the intraspinal injection of serum after frequent lumbar punctures. He advises repeating the dose of 20 cubic centimeters if necessary, in two or three days—giving in all about 40 cubic centimeters of serum.

Jochmann found that an injection of methylene-blue given in the spinal canal (post mortem) could be traced to the olfactory nerve. He does not mention the intraventricular method.

Harvey Cushing⁴ reports a case of an infant six months old, which was sent to the service of Prof. Barker at Johns Hopkins Hospital. In this case a left ventricular puncture was made and 120 cubic centimeters of clear fluid were removed. This fluid proved to contain the Gram-negative intracellular diplococci. In all, five punctures were made 560 cubic centimeters of fluid being withdrawn, and 60 cubic centimeters of Flexner's antimeningitis serum were injected in four injections of 15 cubic centimeters each.

At the Johns Hopkins Hospital several patients were subjected to lumbar laminectomy and a permanent drain was established after washing the subarachnoid space as thoroughly as possible by retrograde irrigation.

When a stasis of ventricular fluid, or, as in my case, a purulent fluid containing the meningococcus, is walled in and we cannot drain the ventricle by means of a lumbar puncture, then the only conceivable plan is to resort to tapping by means of an aspirating needle, washing the ventricle with a harmless saline solution, and lastly injecting the antimeningitis serum as a specific and to modify toxæmia if present. It would seem from a careful study of my case that there no danger was incurred in piercing the frontal lobe and entering the left or right lateral ventricle, but rather relief given to the symptoms of intracranial pressure due to the presence of the liquid confined within the skull. Such pressure symptoms consist of rigidity, spasms, and continuous opisthotonus.

To avoid intracranial pressure Flexner has warned against the injection of more fluid, *i.e.*, serum, than has been removed.

Summing up, the treatment of cerebrospinal meningitis resolves itself into the following procedure: First, lumbar puncture should be performed as soon as distinct meningeal symptoms are noted. Concerning the color of the spinal fluid, competent observers agree that it is usual for turbid fluid to be found, consisting of many pus-cells containing the meningococci. There are very many cases, however, where early in the disease the fluid is almost clear macroscopically, and still the meningococcus is found in the centrifuged

specimen, and by culture identified as the meningococcus intracellularis. In cases of this kind, the larger the quantity of spinal fluid that can be drained away, the better for the patient. The usual quantity removed is 25 to 30 cubic centimeters although I have frequently removed 50 to 60 cubic centimeters at one spinal puncture. Our next step is to inject the Flexner serum. *If possible the quantity of serum should equal but never exceed the quantity drained from the spinal canal.* If, on the other hand, the lumbar puncture yields a dry tap and meningeal symptoms continue with rigidity and opisthotonus, then I certainly should suggest aspirating the lateral ventricles, if in an infant, through the anterior fontanelle, and if in an older child, by the method known as the Kocher method, entering the skull by means of incision and then injecting the antimeningitis serum directly into the ventricle.

A small patch of scalp is shaved and a short one-inch linear incision made about 3.5 centimeters from the mid-longitudinal line and about 5 centimeters anterior to the sulcus centralis; the bone is exposed and penetrated by a Doyen perforator followed by a burr, which leaves a cup-shaped fossa and gives sufficient exposure to the dura to assure the operator that there is no large underlying cortical vessel. The hollow exploratory needle, which should have a blunt point with openings upon the side, is then gently inserted into the second frontal convolution perpendicular to its surface, and at a depth of from 4 to 5 centimeters readily finds the ventricle, particularly if it is distended.⁵

Sixty-five cubic centimeters of antimeningitis serum were injected in three intraventricular injections. Seventy cubic centimeters of fluid were aspirated during three intraventricular punctures. A fourth intraventricular puncture yielded a dry tap.

On November 22d, lateral ventricles were punctured and 50 cubic centimeters of fluid aspirated under pressure. The first test-tube showed a clear fluid, the second a slightly turbid fluid, the third a clear fluid, and the fourth a clear fluid.

Thirty-seven cubic centimeters were injected in two sittings by the intra-spinal route. Six lumbar punctures resulted in dry tap. In two lumbar punctures we aspirated a total of 6 cubic centimeters of fluid resembling the serum injected, in which the meningococcus was absent.

MEASUREMENTS OF HEAD.

Oct. 27.	Occipito-frontal	14.5	inches.
	Occipito-mental	16.5	inches.
	Suboccipito-frontal	15	inches.
	Suboccipito-bregmatic	12	inches.
Oct. 30.	Measurements the same.		
Nov. 20.	Occipito-frontal	15.5	inches.
	Occipito-mental	16.5	inches.
	Suboccipito-bregmatic	14.25	inches.
Nov. 22.	Occipito-frontal	15.25	inches.
Nov. 26.	Occipito-frontal	15.60	inches.
Nov. 29.	Occipito-frontal	15.75	inches.
Dec. 3.	Occipito-frontal	15.75	inches.
Dec. 9.	Occipito-frontal	15.75	inches.



TRANSLUCENT HEAD OF CHILD.

The needle entering the outer angle of the anterior fontanelle, and penetrating the right lateral ventricle which is seen in shaded outline. The falx is dimly seen. The light line running from before backwards is the septum lucidum dividing the two ventricles.

If pus is present, the ventricle should be drained and then washed with normal saline solution until the fluid returns clear. Our next step is to inject no more than 20 to 25 cubic centimeters of antimeningitis serum. This procedure should be repeated daily until tapping of the ventricles yields a negative result. If symptoms of intracranial pressure are noted immediately after the injection, and vomiting or convulsions appear, then it is wise to perform the aspiration and washing of the ventricles plus injection of serum, instead of daily, but once in 48 or 72 hours. The symptoms of the patient and his individual condition must be studied and compared with the condition prior to such treatment, and this will be a safer guide as to the propriety of a second or third or fourth intraventricular injection than can be laid down in a positive rule.

Success in my case was due to persistence in the method outlined: removal of a sufficient quantity of the purulent exudate within the brain, then injection of the serum.⁶

The value of adequate nutrition must not be forgotten. This infant was nursed at the breast, which in itself gave sufficient strength to aid in establishing normal conditions. It is important to supervise the function of the bowel, hence, an enema or an occasional dose of castor oil was ordered. Likewise the function of the kidneys was aided by giving water to promote diuresis.

The infant entered the hospital October 2d, and was discharged December 16th, in normal condition. The eyes have been examined by Dr. Alfred Strouse and by Dr. Chas. May. Both reports show no evidence of blindness. There is no blindness nor deafness. The progress of the infant has been quite good. A tooth appeared during the seventh month. The infant tries to sit up, nurses well, sleeps well, and to all appearances is normal.

I am indebted to my house staff, Drs. Bobrow, Clurman, Littenberg and Freund, without whose valuable assistance this case would not have recovered.

DISCUSSION.—*Dr. Simon Flexner* said that the case presented by Dr. Fischer was the first example of recovery in epidemic cerebrospinal meningitis to come to his knowledge in which there was an impassable obstruction at the foramen of Majendie and in which a purulent exudate had been proven to be present in the ventricles. The recovery in this instance had been attributed to the use of the antimeningococcus serum, and he thought it was fair to ascribe the recovery to it. They were all glad to accept the case as proof that recovery did follow the administration of the serum, yet it was not impossible that the washing out of the ventricles may have contributed to the favorable results; there had been several instances recorded in which the ventricles had been tapped and serum injected; but Dr. Fischer's case was the first case that terminated in complete recovery. Dr. Cushing, of Baltimore, had a case that died; Dr. Knox, of Baltimore, had a case that also died; and Dr. Netter, of Paris, reported another case and this patient died. A very striking thing was that such a considerable operation could be carried out in these young children and without any danger so far as he knew from the half a dozen cases recorded; there had been no ill results from the intraventricular injections. It was very encouraging, therefore, to learn of such a splendid recovery and to think that possibly some of the cases of obstruction which formerly terminated fatally might now be saved. One could speculate as to when the communication between the ventricles and the subdural space was re-established; and conclude that the foramen of Majendie became again patent. It was also possible that the foramen of Luschka contributed to the re-establishment of communication, but for the

present this was merely speculative. Perhaps at some future time an opportunity would be presented to make observations that would clear the point up.

Dr. Godfrey R. Pisek said he was very much interested in the report of the case presented by *Dr. Fischer* and, if the opportunity offered, he would certainly advise the use of the method described. Dry tapplings, as a rule, were infrequent, and he could recollect in a considerable number of lumbar punctures having seen but two dry tapplings. Occasionally, if one tapped in the same place, he would obtain a so-called dry tap. In the case presented there was undoubtedly an occlusion of the foramen of *Majendie*.

Dr. Alfred N. Strouse said that what rendered *Dr. Fischer's* case of special interest to him was the presence of an amaurosis unassociated with any perceptible changes in the media and fundus. Careful and repeated examinations failed to disclose the slightest evidence of œdema or swelling of the nerve, or of retinal congestion. In fact the examination was entirely negative. Such cases were evidently somewhat rare, for little mention was made of them in the literature, although it had only been in recent years that routine examinations with the ophthalmoscope have been practiced in cerebrospinal meningitis. In the cases that had recently come under his observation the amaurosis could always be explained by the pathological findings in the fundus. In order not to take up the time of the Section he refrained from a detailed description of the more common ocular manifestations of this disease and limited his remarks to the particular case under discussion.

How can the undoubted blindness in both eyes, in the absence of lesions in the fundus, be explained? If it had been due to a direct extension of the inflammation along the sheath of the optic nerve or to an exudate at the base of the brain involving the optic tract and resulting in a neuritis, the ophthalmoscope would have revealed some evidences of their existence. Any involvement of the choroid by the infective process would have been equally apparent. Detachment of the retina, hæmorrhage, or external conditions that might have obscured vision could readily have been excluded.

We are, therefore, inclined to account for the amaurosis on the theory of a toxæmia. It is quite conceivable that toxins produced by the meningococcus might cause a temporary paralysis of the visual functions, and that as these toxins are gradually eliminated a complete restoration might occur, as in this case. Somewhat analogous conditions obtain in other forms of amblyopia and amaurosis, in which ocular changes may be slight or even absent.

Dr. Samuel J. Kopetzky said that the question of intraventricular puncture interested him very much, and in otitic meningitis he had performed intraventricular puncture with a resulting cure. But his mode of procedure was not that of *Dr. Fischer's* or *Kocher's*, for he perforated the ventricle through the tegmen cellulæ of the mastoid process. When the ventricle was distended with fluid, it was easily reached and could hardly be missed. He used the ordinary Quincke needle that was employed in lumbar puncture, pushing it through in a slanting direction for from four to six centimeters. He presented at the Otological Section two years ago a patient who had recovered, in whom various and repeated examinations had not shown the meningococcus, except on one occasion; all the other examinations had revealed different micro-organisms from the meningococcus, and the case was not considered to be one of cerebrospinal meningitis, but to be a purulent meningitis following mastoid involvement. Tapping the ventricle through the fontanelle could be done in an infant, as in the case before the Section, but in older patients with meningitis from whatever source the ventricle could be tapped through either of the other routes indicated and the required amount of fluid withdrawn, and quicker results would be obtained than if an attempt were made to obtain the fluid by the spinal route. The advantages of the ventricular puncture in cases which gave "dry" taps from the spinal canal were so obvious as hardly to require comment.

Dr. Louis Fischer, closing the discussion, said that the case he presented was not the first one in which he had employed intraventricular injections. Another case, an

infant seven weeks old, had been admitted to the hospital with symptoms of cerebrospinal meningitis. After a series of lumbar punctures resulting in dry taps, the ventricles were punctured, and pus containing the meningococcus was found. The ventricles were then irrigated with normal saline solution, and Flexner's antimeningitis serum was injected. The patient lived thirty-six days and seemed to show renewed strength after each serum injection. Dr. Flexner reported this case before the International Medical Congress last summer. These two patients were very young, one two months old, the other seven weeks old; hence it was possible, the fontanelle being open, to utilize it for diagnosis and for treatment.

The bulging fontanelle suggested intracranial pressure probably due to the ventricles being filled with pus. When this pus was aspirated and the diagnosis confirmed, the serum treatment was commenced. Heretofore all infants under one year had died, and because of this fact Dr. Fischer selected the youngest class of cases, believing that the ventricles could be entered from above and serum injected, in addition to the intraspinal route heretofore used for tapping and injecting.

With regard to the closure of the foramen of Majendie, Dr. Fischer thought it best to leave the child alone for some time in order that it might become stronger, yet he wished to make a lumbar puncture in order to satisfy himself that the communication between the spinal canal and the subarachnoid space was open through this foramen.

In regard to Dr. Pisek's remarks about dry tapings, he said that he had performed hundreds of lumbar punctures, but he had not used the same spaces between the vertebrae each time; it should be borne in mind that adhesions would form after such punctures. He said he had been exceedingly careful in the selection of the needle, and he would not attempt to do a lumbar puncture in private practice except with proper and qualified assistants. Although he usually punctured the third interspace he did not believe that one should go above the fifth interspace because of danger of injury to the cord.

When dry taps were noted, after entering several interspaces, at different times, and if meningeal symptoms plus the bulging fontanelle continued then, and only then, was it justifiable to tap the ventricles. If an infant, this could be done through the open fontanelle; if, on the other hand, the fontanelle be closed, then the Kocher method of entering the skull should be chosen.

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LITHIA WATERS AS THERAPEUTIC AGENTS.*

By HENRY LEFFMANN, M.D.,

Pathological Chemist to the Jefferson Medical College Hospital.

PHILADELPHIA.

LITHIUM salts have been therapeutic fetishes for nearly half a century. Their use is due to Sir A. B. Garrod, who in the second edition (1863) of his

* Read at the meeting of the Philadelphia County Medical Society, Wednesday, December 8, 1909.

book "The Nature and Treatment of Gout and Rheumatic Gout," gave considerable space to the description of some experiments on the solubility of uric acid in lithium carbonate and to a discussion of the probability that the administration of this substance would prevent the separation of uric acid and urates in the urine, since lithium urate is rather more soluble in water than the corresponding salts of potassium and sodium. By a coincidence that has no scientific value but may have had some influence by suggestion, the substance with which lithium carbonate was thus especially associated in therapeutics is also known as lithic acid. The emotional enters so largely into the impulses of most persons that it is not improbable that the adaptation of lithia for the treatment of lithiasis was given greater plausibility to many on account of the similarity in terms. The doctrine of "signatures" contains many quite as strange inferences. I am old enough to recall the earlier years of the effect of Garrod's book. At that time uric acid was an etiologic Frankenstein monster, and the promise of anything that would keep it and its salts in solution was, of course, hailed with delight. Garrod's contemporaries looked upon lithium as a rare element and he was told that a great objection to his remedy was the difficulty of getting a supply. As a matter of fact, lithium ores are sufficiently abundant for its supply at reasonable rates for all its uses. Indeed, it may be said to have no important use except in therapeutics. Without in any way belittling Garrod's experiments on lithium carbonate as a solvent for uric acid, it is important to note that an effect obtained by the action of a concentrated liquid for some hours, cannot be taken as an index of the action of extremely dilute solutions that will be introduced in the therapeutic use of the salt. Furthermore, a simple association of lithium carbonate solution and uric acid in a test-tube is not at all comparable with the actual condition, in which other salts, especially carbonates and phosphates are present.

Lithium is commonly classed with the metals of the alkalis, of which potassium and sodium are the most familiar examples, but it is on the border line between this group and that of metals of the alkaline earths of which calcium and magnesium are the most familiar members. A peculiarity is its low atomic weight (?) by reason of which in any given reaction it is required in less amount than any of its group. Thus, a given amount of uric acid will be converted into a urate of the same type by the following amounts of salts respectively:—

Lithium carbonate.....	74
Sodium carbonate.....	106
Potassium carbonate.....	138

Assuming a daily excretion of 1.5 grams (about 23 grains) of uric acid, the conversion of this into a neutral urate of the type $M_2C_5H_2N_4O_3$, in which M is any monad positive, will require (roughly) the following amounts of the three alkaline carbonates:—

Lithium carbonate.....	0.7 gram (10 grains)
Sodium carbonate.....	1.0 gram (15.4 grains)
Potassium carbonate.....	1.2 gram (18.5 grains)

Of course, it cannot be assumed that, even if either of these salts is exhibited in very large amounts, the whole of the uric acid would be converted into the corresponding urate, but the figures show that, other things being equal, lithium carbonate would be the best, both because less is required and because the resulting urate is more soluble.

The reservation "other things being equal" is a very important one. If lithium salts are more disturbing in proportion than the others nothing is gained by the dose-difference. Further, it must be borne in mind that although lithium urate is the most soluble of the common urates, lithium carbonate and phosphate are decidedly less soluble than the corresponding sodium or potassium salts. To charge the urine with much lithium is, therefore, to predispose to insoluble phosphatic deposits and the substitution of such a deposit for a urate is no therapeutic gain.

As soon as Garrod's views took hold of the profession, the methods of administering the salts were canvassed with much vigor. At that time the salts were practically curiosities of the laboratory, but it was soon found that enough for medicinal purposes could be easily obtained. It was known to be present in many natural waters, and the exploitation of these "lithia waters" became a feature of commercial therapeutics. The term is not scientifically accurate. Lithia is, strictly, lithium monoxide, which cannot be present in a natural water, but the expression is well established and does not seriously mislead. Waters from many localities have been actively exploited. As the determination of lithium is one of the more difficult problems of ordinary water analysis, while the simple detection (spectroscope test) is very easy and very delicate, many analysts have been content to make the latter test and thus waters containing but minute amounts of lithium have become established in commerce as "lithia waters."

One of the first analysts to call attention to the facts of the case was E. Waller of New York City, who published a paper in *The Analyst* in 1890, in which he gave the results of careful determinations of the lithium in several well-known American lithia waters. In most, but a small amount of lithium was found. One sample contained a considerable proportion but, when Waller tried to find if this was the normal water, the bottlers refused permission to take a sample from the spring and the suspicion is at once aroused that a lithium salt was added. In analyses made about two years ago by the U. S. Bureau of Chemistry (see below) this water shows only minute amounts of lithium.

I have made some examinations which are confirmatory of Waller's experience. Very early in my work as an independent analyst, I was engaged by parties at a distance to examine and certify to the composition of one of these waters. I remember that a letter was read to me by the local agent, in which it was stated that "it will be much to advantage of the chemist to find lithia in this water." I did not find any and did not even get my fee of five dollars for the test. Not many years ago passing along one of our principal streets, I saw a druggist's window ornamented with many bottles and over them in large type the announcement "The strongest lithia water in the world." I

knew the druggist quite well and stopped to ask what he knew about the water. He expressed pleasure at seeing me, because, as he explained, he desired to have me make a special determination of lithia so as to use the report for canvass among the physicians of the city. I took a bottle to the laboratory, and on making the usual test failed to find appreciable amounts of lithia. I was told later that I must have made a mistake, because Professor Trimble at the College of Pharmacy had tested a bottle and found lithium. I at once communicated with him and learned that the water had not been examined in his laboratory. These experiences can be duplicated by any practising analyst.

Fortunately, we now have the results of an extended analysis of medicinal waters of the United States published as Bulletin 91 of the U. S. Bureau of Chemistry, the work of J. H. Haywood and B. F. Smith. About two score of the so-called "mineral waters" were elaborately examined according to the most recent methods. The samples came from all parts of the United States and all the well-known lithia waters are included.

Upon the results of these analyses the Bureau of Chemistry has recently issued a circular of inquiry, the essential features of which I give herewith:—

"The U. S. Department of Agriculture, Bureau of Chemistry, has recently made an extended study of all the most important 'Lithia Waters' sold on the American market. It has been found that nearly all of these waters either contain only spectroscopic traces of lithium (unweighable quantities in 2 to 4 liters), or contain less than one part per million (approximately 0.05 grain per gallon) of lithium.

"Since the National Food and Drugs Act requires that a label be neither false or misleading in any particular, it appears that most of these so-called Lithia Waters are not named in accordance with the provisions of the above mentioned law.

"The owners of most of these springs are claiming that a homœopathic dose of lithium is present in the waters which entitles such waters to be designated as lithia waters, yet at the same time they are not advertising and selling the waters for those troubles that would be treated by a homœopathic dose of lithium, but for such troubles as gout, rheumatism, uric acid diathesis, etc.

"We are anxious to obtain the opinions of leading practicing physicians and teachers in medical colleges on this subject, so we would consider it a favor if you would answer the enclosed questions and return the slip to us at an early date.

"(1) To what class of drugs do the salts of lithium belong?

"(2) Would lithium in a water present as 1 part per million (about 0.05 grain per gallon) have any appreciable diuretic action upon a person drinking such water because of the lithium?

"(3) Would lithium in a water present as a spectroscopic trace (not weighable in 2 to 4 liters) have any appreciable diuretic action upon a person drinking such water because of the lithium?

"(4) Would lithium in a water in either of the above mentioned quantities give the physiological effects of lithium upon a person drinking such water? If so, which?

"(5) Do you use lithium in your practice?

"(6) For what conditions?

"(7) What average dose of salts of lithium do you give to produce the physiological effect of lithium?

"(8) Would a water containing such a quantity of lithium as I have mentioned above in either case be of any service by reason of its lithium (a) in gout, (b) in rheumatism, (c) uric acid diathesis?

"(9) If you were giving a lithia water to a patient in any of the above mentioned conditions, or in any of the conditions for which lithia waters are usually sold to the public, do you believe that either of such lithia waters as I have mentioned would be of any appreciable service because of its lithium? If so, which?

"(10) Should a water containing only 1 part per million of lithium with hundreds or thousands of parts per million of other salts be entitled to the name Lithia Water?

"(11) Should a water containing a spectroscopic trace of lithium, which was so small that the amount of it in 2 to 4 liters could not be weighed, with hundreds or thousands of parts per million of other salts be entitled to the name Lithia Water?"

Several of the questions are difficult to answer, perhaps unanswerable in the present state of knowledge. The subject is of such importance that an attempt should be made to answer most of them from even the meager clinical and experimental data at hand.

The extent to which lithia waters are advertised shows that the profession is still prescribing them, or, at least, that patients are using them. It would be "weary, flat, stale and unprofitable" to discuss here the analytical details given in the report, but a summary of the more important data will be of use. It is to be noted that in the bulletin many statements quoted from text-books are made as to the medicinal value of the waters. Thus lithia waters are said to be diuretic and to be "disintegrating agents" for "gravel and calculus." The letter just quoted shows that the department does not hold these views lately, but from any point of view I regard the discussion of medical questions out of place in such a bulletin, which should be limited to the presentation of technical data and analytic methods.

Of the 42 waters analyzed, 4 do not claim lithium and do not contain it. Of the remaining 38, 21 contain only a trace of that element, that is to say, less, mostly much less, than 1-100 of a grain per gallon. Among these are most of the well-known and much exploited "lithia" waters. Seven samples contain less than 1 grain per gallon; a few contain a little over 1 grain, and only four contain 2 grains or over. We may, I think, dismiss all but the last four as having no appreciable value from the point of view that Garrod urged, and that led to the therapeutic use of lithia, but several important questions need to be considered with reference to them.

In the first place, the experiments by Garrod and others were made with lithium carbonate, and this is the only lithium salt that would be effective and practically applicable. All the analyses of the U. S. chemists give the lithium in the form of chloride which is not likely to have solvent action. If it acts as a diuretic—which is not impossible—it will be largely as an irritant to the secreting tract and the same result could probably be accomplished by increasing slightly the ingestion of common salt. It must, however, not be overlooked that the methods of water analysis rarely enable the chemist to state positively the association of the different ingredients—the so-called “ions”—and in a report giving such ingredients as lithium chloride, sodium sulphate and magnesium carbonate as existing in a sample, the data of the laboratory book will correspond just as well to the arrangement, lithium carbonate, sodium chloride and magnesium sulphate, or any of the other permutations that can be made of the negative and positive ions respectively. It is true that other tests of the sample (*e.g.*, taste, and behavior on boiling) may suggest special combinations, but in complex waters, as are most of those here considered, the arrangement will be inferential, and the government chemists have, therefore, given the statements as “hypothetical forms of combination.” If their arrangement is accepted, no lithia water, in the sense in which Garrod and followers have used the term, is offered for sale in this country.

A more important point still remains, a point to which, I think, little if any attention has been paid, namely, that almost all waters rich in lithium salts are so rich in other mineral ingredients that they are not suitable for a regimen. The four waters here noted are respectively from Hathorn and Congress Springs, Saratoga; Mt. Clemens, Mich.; and White Rock Spring, Waukesha, Wis.

A conspectus of the more abundant ingredients in these samples will show best the point I wish to make. The data are calculated from the official results, and given in round numbers which are close enough for the demonstration to be made:—

	ALL DATA IN GRAINS PER U. S. GALLON			
	Hathorn	Congress	Mt. Clemens	White Rock
Lithium chloride.....	2.6	2	6.2	4.5
Sodium chloride.....	431	300	4476	33
Calcium bicarbonate.....	181	133	(see below)	192
Magnesium bicarbonate.....	116	99		7

The Mt. Clemens water is not credited with any magnesium carbonate and with but a small amount of calcium carbonate, but on the other hand is credited with very large amounts of calcium and magnesium chlorides.

It seems to me these figures speak with no uncertain sound. An attempt to use any of these waters for the therapeutic action of lithium would be on the same basis as the administration of cod-liver oil for the minute amount of iodine in it, and suggests the story of the toper in a prohibition town, who drank a quart of water because there was a teaspoonful of whiskey in it. Another and even more serious objection applies to the Hathorn and Congress Waters. Both contain notable amounts of barium salts. Barium compounds are distinctly poisonous. Recent analyses by the U. S. chemists in a special

investigation have shown that barium compounds contained in plants have been the cause of serious poisoning of stock on some of the Western feeding grounds. The element has some analogies to lead and is certainly a dangerous ingredient in a drinking water.

The conclusion of the matter seems to me to be that it is doubtful if even lithium carbonate is of any real value in the treatment of lithiasis, and if so, it cannot be introduced by the use of the commercial lithia waters. The only way in which to get the proper dosage is to use the pure salt in tablet form or (probably the best method in practice) to prescribe the liberal use of a distilled water containing definite amounts of pure lithium carbonate. Excellent distilled waters can now be obtained at moderate cost and druggists can easily dissolve a small amount, say five grains, of the pure carbonate in a gallon and the water can be used as desired in place of ordinary drinking water.

The time is now at hand to overthrow the "lithia water" fetish, the only use of which is to extract annually many thousands of dollars from the pockets of real and imaginary sufferers in this country.

TONSILLAR HYPERTROPHY.*

With Special Reference to the Anatomy, Surgical Treatment and Operative Dangers.

By RUFUS B. SCARLETT, M.D.,

Instructor in Diseases of the Throat and Nose in the Polyclinic Hospital.

PHILADELPHIA.

THE dangers of tonsillar hypertrophy in children have been studied so carefully by Goodale, Wright, Wood, Brown, Jacobi and others, and the results of their investigations have been presented at various times in such a masterly and forcible manner, that it may appear somewhat presumptuous on my part to attempt a paper on the same subject, but until such dangers are readily recognized and their true significance fully appreciated by the general practitioner, any contribution that will have for its object the awakening of the interest of the medical attendant seems justifiable.

It will be recalled that the faucial tonsils are two almond-shaped masses of lymphoid tissue, situated on either side of the oropharynx, bounded in front by the anterior pillar of the fauces containing the palatoglossus muscle; and in the rear by the posterior pillar containing the palatopharyngeus muscle. The tonsils make their appearance between the third and sixth month of gestation, reaching their full size about the sixth year, after which time they undergo an atrophic change until the twelfth year.

The crypts, formed by the invagination of the epithelium, are variable, their number depending upon the size and condition of the tonsil at the time

* Read before the West Branch of the Philadelphia County Medical Society, November 16, 1909.

of the examination. The average number can be placed anywhere from eight to eighteen. It will be seen that the larger crypts are in the upper half, and those whose orifices open into the supratonsillar fossa are the ones which concern us the most in the consideration of systemic infections, for they are usually filled with caseous masses when the tonsil is hypertrophied. The lacunæ in the lower half of the tonsil are usually free from exudate, owing to their downward direction and to the action of the palatine muscles during deglutition.

The pharyngeal tonsil is a median mass of lymphoid tissue situated in the posterosuperior wall of the pharynx, and when hypertrophied is spoken of as an adenoid. Even without enlargement the postnasal space is nearly filled by this gland, which measures in the median line nearly 1 centimeter. It can be readily appreciated, therefore, that any increase in the size of this organ may produce practically complete obstruction of the nasopharynx, and cause the child to suffer accordingly.

The blood supply of the tonsils is variable, and the vessels, arranged somewhat irregularly, are from the larger trunks in the neighborhood. The main supply is derived from the ascending palatine and the tonsillar branches of the facial, the ascending pharyngeal of the external carotid, and the dorsalis linguæ of the lingual.

The lymphatics of the tonsillar glands are important in the consideration of systemic infections, for it is usually through these channels that the offending organisms or their toxins make their way for a more or less general involvement. Wood¹ has shown by his experiments and careful dissections that enlargement of the "tonsillar gland," palpable just below and behind the angle of the jaw, is significant of infection having gained entrance through the faucial tonsil. "Infection entering through the pharyngeal tonsil involves the lymph glands just beneath the posterior border of the sternocleidomastoid" (Wood). Recent investigations seem to point to the possibility of the tonsils being the portals of entry, thence through the lymphatics, for many cases of tuberculosis of the lungs.

In considering the vital structures in the neighborhood, we find that in close proximity, $1\frac{1}{2}$ centimeters backward from the tonsil, is the internal carotid artery, and 2 centimeters backward and outward is the external carotid artery, being separated from the tonsil by the superior constrictor and the stylopharyngeus muscles. Another important structure in close relation to the tonsil, and one frequently affected when hypertrophy exists, is the Eustachian tube, situated from 1 to 1.5 centimeters above and a little posterior. Not only does the enlarged gland sometimes extend a short distance along the course of the tube, but the pharyngeal tonsil when hypertrophied frequently surrounds the pharyngeal orifice to such an extent as to interfere with proper ventilation of the middle ear.

Source of Infection.—Various authors have shown that the crypts are the depositories for the invading bacteria, and from these points it is thought the organisms effect an entrance in some way or other through the lining epithelium. This belief, no doubt, is encouraged by the ease with which pigments penetrate the tonsils, although the presence of bacteria has not as yet

been detected with as great facility. It is believed by Brown,² Wright,³ and others that micro-organisms do not enter the tonsillar stroma as readily as do the pigments, and even when success is evident, their virulence is probably lessened by the phagocytic action of the cells within the organ thus the tonsils are looked upon as protective agents also.

Causes of Tonsillar Hypertrophy.—Several theories have been advanced as to the cause of tonsillar hypertrophy. White⁴ refers to heredity as an important factor, and while a congenital origin has been suggested also, Packard⁵ is doubtful of this source. He mentions the fact, however, that nasal catarrh is often noticeable in infants in whom there is a subsequent development of adenoid vegetations. Osler⁶ calls attention to the possibility of a disturbance of the general lymphatic system simulating status lymphaticus. Climatic disturbances, unhygienic surroundings, improper exercise, scant clothing, and deficient food have all been suggested. There are those who look upon the tonsils as organs of defense, instead of sources of infection, and enlarging as they do because of frequent call to action.

The indications for interference in tonsillar hypertrophy are usually quite well marked. Difficulty, or even inability, to breath through the nose; the open mouth; the noisy respirations, especially when asleep; the pinched nostrils; the susceptibility to recurrent attacks of cold; a persistent coryza; stupidity of perception; digestive upset; interference with the normal ventilation of the middle ear, thus producing deafness, and not infrequently infection of this cavity. All of these symptoms are of importance, but all are not necessarily present at the same time.

Numerous methods for the treatment of hypertrophied tonsils have been suggested. Cauterants and astringents have been faithfully used, and still have advocates, but in the light of our present knowledge, these methods are now considered timid and poor procedures. Various operations have been devised, and they all seem to have their virtues. The treatment, however, does not always call for surgical interference. Cases of tonsillar hypertrophy are sometimes encountered in which symptoms are not manifested and in which the child appears healthy in every respect. While I have seen a number of cases of this sort, I have especially in mind a small nephew, who is the healthiest of three children, and in whom the tonsils are plainly seen projecting beyond the pillars of the fauces. The other two children of the family have been operated on with marked improvement in their condition, but in view of our ignorance of the true function of the tonsils, I cannot help but feel that it would be a mistake to subject the third child to an operation in the absence of symptoms necessitating such a procedure, and thereby rob the economy of any normal function that might remain in these glands.

The selection of any particular operation depends upon the fancy and experience of the operator. To insure the best results, the patient should be admitted to the hospital the day before in order to be carefully prepared. After the administration of the anæsthetic, the patient is usually retained in the same recumbent position, although some prefer the sitting posture, while others, that the child should be placed on its side. A simple and satisfactory

method, and one, in part, referred to by Casselberry,⁷ is to free the anterior and posterior pillars, pull the tonsil out of its bed with a suitable pair of forceps, thread the tonsillotome, and sever the remaining attachments. In the great majority of cases, if proper care is exercised, the tonsil will be enucleated. In case of any tonsillar tissue remaining, it can be readily removed with the tonsillar punch.

The cold wire snare seems to have met with much favor among a certain class of operators. So far the advantage of this method has not been fully demonstrated. A careful and almost complete dissection of the tonsil is required before the application of the snare in order to insure success, and to guard against injury to the pillars and the uvula by the drawing of these structures into the loop. The wound produced by the snare is not clean cut, but ragged and bruised. While there may be less bleeding at the time of the operation, there appears a greater tendency to œdema and secondary hæmorrhage, owing to the fact that the snare is not a cutting instrument, and the tonsillar attachments are severed by a tearing or crushing, separating to a certain extent the subtonsillar tissues, and permitting an extravasation of serum and possibly blood from the smaller vessels. One can imagine what would happen in the subcutaneous tissues if an incision through the skin was attempted with a blunt instrument instead of a properly sharpened knife. Ballenger⁸ saw a patient exsanguinated in 10 minutes and in bed for three weeks following the use of the snare, and Freer⁹ refers to an instance in which throat gangrene developed and death resulted from ulcerative endocarditis. Casselberry¹⁰ uses the snare less in children now than formerly, one reason being the tendency to secondary hæmorrhage.

During the meeting of the Pennsylvania State Medical Society in 1907, Marshall¹¹ presented a paper in which he heartily advocated the total extirpation of the tonsils. His method is to grasp the tonsil with forceps, dissect it free from its arches and membrane, and then turn the gland out of its bed by the spoon end of the same dissector. Without changing the grip on the tonsil, a double curved pair of scissors is used to snip the tissues that hold the under surface of the gland. Pyncheon¹² practically does the same operation, but with specially devised forceps and scissors. The latter author has also described a "tonsillectomy by electro-cautery dissection,"¹³ which likewise permits the complete removal of the gland, but inflammatory reaction in this method is usually marked, and there is apt to be secondary hæmorrhage which is hard to suppress.

The mass of adenoid tissue in the nasopharynx is removed with the Gottstein curette or the French adenoid forceps, with slight preference for the latter instrument, because of the ability to shave around the orifices of the Eustachian tube without injury. This instrument was especially applicable in the case of my small niece, in whom the greater bulk of the tissue was around the right tube, while a smaller mass surrounded the left. If the adenoid mass is in the median line, as in the majority of cases, it can be readily removed with either instrument.

The beneficial results following the removal of hypertrophied tonsils that

have been offending are usually most gratifying. Mayer¹⁴ knew of two brothers, neither one of whom was free from tonsillitis for a period of two months. The physician previously consulted incurred the fear of his two patients by injecting on several occasions diphtheritic antitoxin. Extirpation of the faucial tonsils and removal of the adenoid tissue was the means of affecting a cure. Casselberry¹⁵ had an interesting case of a boy who after attacks of tonsillitis suffered from polyarthritis, which was thought to be of rheumatic origin. His tonsils were not only increased in size, but contained multiple puriform foci. With the removal of the tonsils, both the tonsillitis and the secondary attacks of arthritis disappeared. During a discussion at the meeting of the Pennsylvania State Medical Society last year, the writer mentioned a case operated on about three months previously for Dr. J. C. Gittings. The patient was a frail, puny child of about six years of age, and was suffering from deafness and pains in the ears. The faucial tonsils and a large adenoid were removed five days before the Fourth of July. By the time of the celebration of the anniversary of our independence, hearing had become so acute that the parents found it necessary to put cotton in the child's ears because of the intensity of the concussions to the child. A delicate niece found health and strength following the removal of tonsils and adenoids, which had been the cause of repeated colds, and on one occasion, an acute suppurative otitis media, which necessitated paracentesis. Still another case, operated on over a year ago, had had a continual discharge from the ear for a couple of years. Two days after the removal of a large adenoid, the discharge ceased and the ear has been dry ever since.

The principle danger in the removal of hypertrophied tonsils is the possibility of hæmorrhage. This may be due to the puncture of a fair-sized blood-vessel in the neighborhood as the result of faulty technique, or to the fact that it is abnormally placed. The danger of hæmorrhage is increased by traumatism to the pillars. While under ordinary circumstances the larger vessels of the neck are too deeply situated to be injured, carelessness or a fault in technique may result in unexpected complications. A year or so ago a prominent specialist in town encountered an alarming hæmorrhage from a vessel which had its course over the surface of a hypertrophied tonsil. Some months ago the writer punctured a small plexus of veins toward the lower border of the left tonsil. For a time the flow of blood was free and anything but pleasant, but the bleeding was controlled before the patient left the table and the child suffered no ill effects.

In 1904 Packard¹⁶ presented before the American Laryngological Association a tabulation of the fatal results of operations upon the nose and throat. Fourteen deaths from hæmorrhage followed the operation for the removal of adenoids or tonsils or both. Recently the same author reported before the section on Otology and Laryngology of the College of Physicians a sudden death following the removal of tonsils and adenoids. There was no more than the usual bleeding, and the patient had recovered entirely from the anæsthetic and had conversed with those in the room. Symptoms of collapse suddenly appeared about six hours after the operation, and the patient quickly suc-

cumbed. Wachenheim¹⁷ reported two cases of adenoid removal in which secondary hæmorrhage, after five days, caused him considerable uneasiness.

Pyncheon¹⁸ emphasizes the importance of this operation and states that it should not be underestimated. He calls attention to the fact that the difficulties to be encountered besides operating in a small cavity are "operating in the channel of respiration, which must not be occluded by blood or otherwise; occupying a field jointly with the anæsthetist, who should always be given preference; operating on a patient who may be said to be semiasphyxiated from defective respiration whereby the blood has become overladen with carbon dioxide and underoxygenated for possibly several years, thereby increasing both the difficulty and the danger of the anæsthesia; operating in close proximity to important vessels, and at all times in a region rich in blood supply, necessitating a field more or less obscured in blood; operating in a field the nerves of which, when irritated, may by reflex action through the pneumogastric unfavorably affect the heart's action."

Thus it will be seen that an operation which many look upon as a simple procedure cannot be thoroughly done without incurring certain risks.

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JOINT CONDITIONS CAUSING PENSIONABLE DISABILITIES.*

By J. TORRANCE RUGH, A.B., M.D.,

Associate in Orthopedic Surgery in the Jefferson Medical College.

PHILADELPHIA.

For the purpose of this paper, it has seemed best to classify the affections of joints most frequently seen by surgeons examining for pensions, into those

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due to extrinsic and those due to intrinsic factors, as under this classification, not only may the subject be more easily and logically considered, but those agents which naturally occur to the mind of the examiner as most intimately associated with these conditions are at once discovered.

The extrinsic causes naturally group themselves under two subdivisions, viz., active traumatism and passive traumatism, and with the latter of these two, we wish to deal more especially. The recognition of all forms of fracture into a joint, dislocation, acute traumatic synovitis and arthritis and such lesions as immediately succeed a direct injury to a joint presents no difficulty. The modern methods of diagnosis, especially the X-ray, furnish means of determining the character and extent of any such traumatism and the prognosis of the condition together with the degree of disability likely to ensue is referred to the judgment of the examiner with almost absolute certainty that the results will be fairly accurately forecast. The part, however, which a slight injury plays in the production of disability is at times difficult to estimate. Its effect is, except in a tubercular part, more likely to be exerted upon the function of a joint than upon the anatomic structure and thus to give rise to disturbances which later, rather than earlier, may prove serious. In the same class is the effect of what is commonly spoken of as the "traumatism of function," which at first gives rise only to a distinct group of symptoms but, ultimately, by its persistence causes an actual pathologic change which will prove as completely disabling as though there had been a primary and distinct infection or focus of disease in the joint. A slight twist or blow to a joint is capable of engendering such alteration of function through efforts at protection from pain or soreness as will ultimately entirely disorganize the part, and in itself constitutes an actual traumatism to the part even though the original injury may have been entirely forgotten. We are oftentimes prone to ascribe such conditions to rheumatism or other vague infection in the absence of a history of an acute condition following the slight injury. A case of this kind is as follows: A man twenty-five years of age complained of a coarse grating sound in both knees upon flexion and extension of the legs but without pain or soreness except after a long walk or severe leg exertion. There was no history of injury or of any infectious process which could account for the joint lesions and these were not discoverable in any other joint. Careful inquiry elicited the fact that in early childhood, he had worked day after day during several summers in truck patches and always walked on his knees in preference to stooping over to pull weeds. Though he suffered no inconvenience from them at the time, the roughness of the ground and the small stones served to produce thickening of the synovial membranes in his knees which will remain with him through the rest of his life and will later on hinder him from engaging in any work or active pursuit which will throw strain upon these parts. Such a condition may be present for years and be easily overlooked by an examiner for enlistment in service, or if recognized, may be considered of no importance. Under the stress of marching, drilling and the labors incident to the soldier's life, an inflammatory process arises and is repeated by subsequent traumatisms until partial or complete disability results and the soldier enters the pension-

able list. Supposing, then, his work or profession demanded considerable walking or standing, he would be compelled to give up his position and learn something which would permit him to sit while working and this forced change would justly entitle him to a pension commensurate with the degree of disability and his rank in the service. Or, he may have been able to complete his enlisted term without symptoms of trouble and have entered again the field of labor he worked before enlistment. The demands of his position cause increased strain upon weakened joints and they begin to interfere with his earning capacity. This continues until he is forced to give up and to seek a lighter occupation and this act of changing under duress, or that of lessened earning capacity through disability, enters him upon the pension list. The simple traumatism of function, therefore, upon a part susceptible or exposed to such influences must be regarded as a very important factor in producing disabling joint conditions among men leading an active and exposed life such as that of the soldier, and the changes induced by such an agent must be recognized by the examiners as constituting a distinct pathologic condition capable of destroying joint function.

Of the intrinsic factors causing disability, there is none so commonly cited and yet none so generally misunderstood as rheumatism. In an admirable paper before this association in 1903, Dr. P. Y. Eisenberg presented the salient features of the rheumatoid conditions among soldiers, and one cannot but read his paper with the feeling that he met the situation clearly and fairly. There is a marked difference between the old idea of rheumatism and our present understanding of it. There is also a wide clinical breach between the present day belief regarding rheumatism and that more or less common affection known by many names but most commonly called rheumatoid arthritis though more properly "arthritis deformans." No one has observed cases of the two conditions, even granting that each is due to a distinct toxæmia, and has failed to recognize the marked clinical difference between them. Both are polyarthritic, both may be chronic and both cause permanent joint changes, but the progress of the two is very unlike. In the rheumatic joint, the form of inflammation is acute and is accompanied by synovitis with effusion into the cavity and there occurs likewise the acute fever, involvement of numerous joints, cardiac complications and the other well-known symptoms which constitute the classical picture of rheumatism. The attack leaves the joint membrane changed even though slightly, and this may in turn become the focus of a chronic synovitis and arthritis which will totally disqualify the patient for earning a livelihood. When the case, seen for the first time, presents changes in joint-contour and structure following a history of one or more acute attacks of rheumatism observed by a competent physician, then and then only is the diagnosis of rheumatic joint justified. This class of cases does not present repeated acute exacerbations of the local inflammation but runs a rather chronic unchanging course, the function of the joint, however, becoming gradually less. Deposits occur about the joint and thickening of the articular and periarticular structures takes place though not to the extent seen in arthritis deformans. Numerous joints in the body such as the shoulders, elbows, knees, hips, etc.,

are frequently involved to the extent that the patient is unable to move them to the full limit of their functions, and such a person must be considered as incapacitated to a greater or less degree though he could not be said to be totally disabled.

On the other hand, when arthritis deformans, rheumatoid arthritis, rheumatic gout or the multitude of other names applied to it, attacks a person, the picture is that of a progressive condition beginning with a more or less acute attack in one or multiple joints but lacking the marked constitutional symptoms of rheumatism. Likewise there are no cardiac or circulatory complications and but rarely is it possible to discover a focus of infection from which the toxins are absorbed which give rise to the irritation. I have seen four cases in which a generalized joint involvement followed where there had been a localized tubercular process that had either been removed surgically or had become encapsulated. The involvement may remain in one joint such as the knee, hip or shoulder, or it may begin with the small joints of the hands and feet and gradually progress to others until every joint in the body has been affected. That most frequently seen in adults, however, occurs in the larger joints and is one of the most resistant conditions to treatment in the realms of disease. There is uniform enlargement of the joint with crepitation which comes on early. The enlargement may be due to effusion into the joint sac but there is also swelling of the articular cartilages, ligaments and periarticular structures together with proliferation of the involved tissues. In one variety, the X-ray will show a characteristic lipping of the articular edges of the epiphyses while in others such is absent. The multiplicity of the forms of this disease renders the description of the pathologic changes too lengthy for the present purpose, yet the clinical picture, which is fairly constant, is unusually clear. The stiffening of the muscles about the affected joint is an early symptom and is caused by the pain of motion. There is no localization of tenderness, no rapid onset of atrophy and the subacute attacks which recur with more or less frequency are quite unlike that seen in other forms of infection.

Inasmuch as the views regarding the etiology of all these diseases have undergone a complete change within the past few years and as their bacteriology has not yet been established, it will not be germane to our present purpose to discuss this feature. Suffice it to say, however, that adults are commonly affected by the disease, and that a strenuous life together with exposure and fatigue are factors which predispose to its onset.

The prognosis is of the utmost importance as it presents usually a decidedly unfavorable aspect. The younger the patient, the more favorable the results from treatment, but when joint changes have once set in they may be looked upon as permanent. It is possible to ameliorate conditions as they exist, but remedial measures have not yet been found curative except in certain cases. Hoke and Andrews have shown that some patients may be entirely relieved of pain by proper attention to diet and prevention of intestinal putrefaction, but in their series of cases no alteration of the joint changes was possible. All authorities agree as to the permanency of these pathologic changes and the progressive disability accompanying the process so that, when a subject is

found suffering from this affection, the most favorable outlook for the case is that of permanent disability, either partial or total, depending upon the stage of the disease, the degree of destruction of function, the age of the patient, the number of joints involved and the occupation.

In a paper such as this, one feels a hesitancy in taking up the subject of tuberculosis of a joint as contributory to disability as the entire time could, with profit, be easily occupied in its consideration and yet touch only upon its superficial features. A very fortunate fact is that tuberculosis of a joint is much less common in adults than in childhood, and hence does not afford such a prolific field for consideration as those just mentioned. Nevertheless, the results are so much more serious both as to life and ability to labor that it at once assumes very great importance. Recent studies and observations support very strongly the statement that tuberculosis of a bone or joint is but a local manifestation of a constitutional disease. It is not always possible, in fact it is rather infrequently so, to demonstrate or determine the location of the other foci, but the finding of the bacilli in the blood, as described by Rosenberger, lends much weight to the theory, unless it be admitted that the bacillus is an almost universal inhabitant of the human body and may, therefore, be found in the disease-free individual. Further observation and investigation are necessary to determine this and other points regarding this disease. The lowered vitality of the soldier, the more or less constant slight injuries and the possible presence of a concealed spot of infection or exposure to infection by a comrade, furnish the proper soil and conditions for a tubercular involvement. The clinical picture is that of a chronic process in one joint, with gradual onset of muscle spasm which may be more or less intermittent, causing a temporary disturbance of function of the part but soon becoming complete. There is more or less deformity of position, joint enlargement, pain, marked muscle atrophy coming on early, localized tenderness, and, in the adult, rather rapid destruction of the part. Total disability results which may only be modified by complete ablation of the disease focus or by amputation of the affected limb. When the spine is the seat of the trouble, absolute support and fixation are indicated, but, under the most favorable circumstances, the prognosis is not so good as in younger persons. Abscesses may form and demand operative interference and may eventuate in chronic sinuses which, infected by mixed organisms, sap the vitality, cause amyloid degeneration of various organs and ultimately produce death. Furthermore, one can never know when a tubercular case is cured. In a case under my own observation, reported some years ago, the process remained dormant for sixty years and then caused the death of the patient by renewed activity and extensive suppuration. Hence, even under radical treatment, it is not certain that the process is eradicated and the patient has been removed from the danger of a future attack. This condition, therefore, constitutes at once one of the most serious forms of joint involvement which can befall the soldier, and merits recommendation for the utmost limit of pension. Some years ago a sailor came under my care who had been treated for two years for chronic rheumatism of the hip, but who presented a typical picture of tuberculosis of the neck of the femur. I operated upon him and

removed an abscess from this part. He recovered from the operation but suffers from a permanent disability of the hip which will prevent him from earning a living at manual labor for which alone he was fitted. In spite of this, he has been refused any advance beyond fourteen dollars though the disability was contracted while in active service. I have personally appeared before two boards and certified to three in his behalf, but without avail, and anyone who sees many of these cases cannot but know the very great danger as well as the fearful disability which attends them; further, that they merit the full amount of pension that their station will warrant. From this, of course, must be differentiated the syphilitic arthritis which may present many symptoms in common, but a careful inquiry along other lines will discover associated or previous evidences of syphilis, which may serve to confirm one's suspicions, though, of course, a distinct history of luetic infection is the only certain differentiating point.

There is another class of joint cases which constitutes a lesser number but which is accompanied by a marked degree of disability. This includes all infective conditions arising from within the body such as metastatic sepsis from a wound or abscess in remote portions of the body, pneumococcus arthritis, typhoid arthritis and that accompanying any of the acute contagious or infectious diseases. Of late years, the number of these cases has increased and the conditions occur much more frequently than formerly but a satisfactory explanation of this fact has not yet been advanced. The diagnosis of the complication is usually rendered easy by the history of the constitutional malady. In the majority of instances, the joint troubles develop during the height of the disease or toward the close of the attack, and the main characteristic is the extreme severity of the symptoms at the onset and during the course of the trouble. A high fever, great pain and swelling, exquisite tenderness, redness, distention of the joint sac by effusion and a marked tendency to suppuration, dislocation or deformity, constitute the clinical picture presented by the majority of these cases.

The function of the part is permanently impaired and, in many instances, is entirely lost. The involvement is usually mono-articular though the poly-articular forms are occasionally seen. The similarity in the symptoms of many of these septic cases and of acute articular rheumatism has given very great support to the present day theory of the bacterial origin of the latter condition but thus far the recorded proofs have not been regarded as sufficient. The bacteriology of the joint secretions and fluids in the septic or infective cases usually shows pyogenic cocci and occasionally the germs of the original disease are found. It is commonly accepted, however, that the pus organisms or their toxins are responsible for the acuteness of the symptoms. There is but one form of infection which requires to be differentiated from these just mentioned, viz.: the gonococcus. The symptoms in this may be identical with the others and only the history of the urethral discharge will determine the true nature of the attack even though suppuration occurs and careful examination of the secretions be made, for metastasis may have followed the action of the toxins instead of the diplococci.

Careful examination of these septic joints will always show the marked permanent thickening of the joint structures and the limited or lost function together with the adhesions between the articular surfaces themselves. When these features are present, they must be regarded as unalterable to any great degree, and that for various reasons. The age of the patient will preclude any prolonged efforts at restitution, the pain incident to attempts to restore function is too severe and the strain too great for the patient, while the extent of the joint involvement will render recovery extremely doubtful if not impossible. In two or three instances I have succeeded in restoring function to extensively involved parts in younger subjects, but after forty years of age I have always failed utterly. When, therefore, such cases present for examination in the soldier, if the affected part is involved in his earning a livelihood or prosecuting his trade or profession, he will be entitled to a measure of compensation commensurate with the degree of disability, as such involvement would absolutely incapacitate him for service under military regulations.

One other form of joint lesion which is occasionally seen in the adult and which may be a pensionable condition in certain instances is the spinal arthropathy or so-called "Charcot's joint." While it is true that the majority of cases of locomotor ataxia are due to syphilis, yet, there are many in which such origin is absolutely incapable of proof and which must be accepted as due to exposure and physical or nervous strain. More than one joint may be affected, though such is rare, and the knee is the joint most frequently involved. It has many symptoms in common with arthritis deformans, but is not formative in its action. The course is chronic, pain slight, enlargement marked, relaxation due to absorption of the articular surfaces and general softening of the periarticular structures is present and ankylosis does not occur. In rare instances the process may become arrested and the parts may resume a semblance of their former health but the most frequent termination is total disability. I recently saw a case with Dr. Geo. Price, of Philadelphia, in which the symptoms subsided and recovery took place, and the joint has remained well for more than a year. The presence of other evidences of spinal cord degeneration and the gradual onset of the joint symptoms render the diagnosis comparatively easy, and the estimate of the degree of disability will cause but little difficulty as the joint condition is superadded to that of the nervous system.

Finally, a few words may not be amiss as to the degree of disability occasioned by joint conditions in general. The importance of the joint in the physical economy of the system is patent to all and the interference with normal activity which results from any impairment of its function is equally obvious. The location of the affected part demands consideration, and proper allowance is due those joints whose function is more essential to health and the claims of social or business relationships. The greater liability to traumatism, whether accidental or functional, is also a compelling factor in forecasting the relative value or importance of the individual articulation, and the situation of the part is usually the determining guide for such decision. The occupation, whether previous to disability or following it, may be entirely

changed by involvement of a given joint or may of itself totally modify the extent and character of the lesion and thus become a very considerable factor in the life and very existence of the patient or in the progress and prognosis of the disease, whether local or constitutional. The age of the subject will likewise have an important bearing upon the progress of the condition and the chronicity of the process will frequently modify the termination and its forecast. The previous health of the patient exerts a modifying influence upon the development and ultimate prognosis of many of these chronic affections and, in many instances, furnishes the direct cause for the unfavorable course of the disease and the inability to arrest or prevent the ravages of the infection.

Of greater importance, however, than the preceding, yet in close harmony with them, is the degree of involvement or the extent of the lesion in the affected joint. With but slight thickening or roughening of the synovial or articular surfaces, there is less apt to be immediate serious impairment of function, but such a joint is a constant peril to the owner because of the effects of traumatism, whether accidental or functional, and of constitutional states or changes upon damaged parts. This form of joint receives too little consideration at our hands and yet constitutes a very prolific source of disabling conditions because of failure to properly protect it and guard against those slight but oft-repeated injuries or influences which aggravate and stir into activity otherwise mild and harmless processes.

When changes in the articular cartilages have taken place and there is absorption or proliferation of fibrous or bony tissue, this is in all cases permanent and constitutes a disability, the degree of which will depend upon the etiology, prognosis and the immediate loss of function. For instance, in certain conditions, there may remain a small range of motion which would prove more disabling to the patient than if the joint were absolutely rigid; while in other cases, the contrary is true. Each case must be determined upon its own merits and circumstances; the fact of the great importance of slight changes in joints must not be disregarded, and I wish to emphasize and endorse the conclusion of Dr. Eisenberg that disability covers not only the changes wrought by disease but also the changes in life, habits and occupation made necessary by constitutional or local affections of the joints.

THE COAL-TAR DERIVATIVES *versus* OPIATES.*

BY CHARLES E. DE M. SAJOUS, M.D., LL.D.,

Professor of Therapeutics and Pharmacology in Temple University.

PHILADELPHIA.

WHEN honored by the request to address you, I was asked to express an opinion as to the opposition to the use of coal-tar derivatives occasionally heard—extending at times to the expressed desire that they be removed from

* Read by invitation before the Scientific Section of the Philadelphia Branch of the American Pharmaceutical Association.

the Pharmacopœia—because of the untoward effects, including deaths, these agents have caused.

When the question is analyzed with due care, we are brought to realize that inasmuch as the agents of this group, as now used in medicine, serve mainly to relieve pain, the point to decide is whether the field, in this all-important therapeutic indication, is once more to be handed over to opium and its analgesic alkaloids.

The history of the coal-tar derivatives as therapeutic agents shows that it is not through the medical profession that the sins attributed to them have been perpetuated, but through lay manufacturers of headache powders. If such a reason were to prevail among those who oppose the use of acetanilide, antipyrine, and acetphenetidine, in practice, or their retention in the Pharmacopœia, then all our valuable therapeutic agents should be similarly treated, since all in turn have once upon a time been used by empirics or enterprising commercialists who look upon human suffering merely as an opportunity to satisfy their greed. Even the fate of opium and its analgesic salts would be sealed by the evil reputation soothing syrups have given them.

The most important phase of the question which bespeaks their retention among our official remedies, however, is the relatively small proportion of coal-tar habitués as compared to the victims of the morphine habit. So fearful are physicians nowadays of initiating this evil trend and its consequences that they are only using opiates, and morphine particularly, as a last resort for the relief of suffering. They have learned that their very worth renders them dangerous. Acute pain is so promptly arrested, that the sufferer is raised from the very depths of Tartarus to the loftiest bower of the Elysian Fields. As the analgesic effect wears off, the patient again craves relief and renews the dose, repeating the process as needed. Briefly, for the professional man the use of morphine is at all times the possible initial factor of a morphine "habitué" or "fiend"—a condition far more serious and destructive to body and mind in most cases than that for which the opiates had been originally administered. This is aided by a feature of their action which is too often overlooked—the vampire-like trick of giving pleasure to their victims as they promote sleep. It is not merely the soothing breeze of fanning wings that contributes to the victim's undoing, it is a sensation of well-being, a peculiar dreamy state, during which pleasurable sensations, images, and thoughts, float before the mind in endless chains. As if certainly to lure him on towards the abyss, these symptoms do not, as a rule, occur while the opiate is used to subdue acute pain; they appear when the patient is improving, or, if the severe pain persist, when larger doses are needed, through increased tolerance, to obtain as active results as before. The desire for psychic delusions replaces that for relief of pain and all the evils of the opium den are open to him—who would not have been exposed to them, let me add, had another analgesic been used.

It is here that the coal-tar products are of inestimable value in the hands of the physician. Even the most active agent of this class used in medicine, acetanilide, is practically inoffensive as a cause of drug mania. As

Sollmann¹ states, it has "occasionally caused the development of a drug habit with craving and withdrawal symptoms. An individual predisposition appears to be necessary, for the condition is relatively rare." And let me urge that even these cases are attributed by him to the use of "headache powders," which are available to the public without prescription, that is to say without medical supervision.

Again, compare the tenacity of the opium or morphine habit, which denotes the severity of the lesions the drug produces in the cellular structures—with that of the coal-tar products. "Among other distressing symptoms after sudden withdrawal" wrote the late Norman Kerr, of London, "the following have been observed in aggravated form: Rigors, nausea, vomiting, exhaustive diarrhoea, convulsions, delirium, prostration and collapse" . . . "The agony is in many cases indescribable, and the symptoms are so alarming that the full narcotic dose of the drug has had to be given to avert a fatal issue." Conversely, withdrawal of coal-tar products gives very little trouble. Under the gradual withdrawal of the drug, tonics and the bromides, with a little cannabis indica to subdue pain, if any, prompt recovery ensues. The opiates grip the patient as would a vise, while the fetters of the coal-tar products are such that even a slight effort will loosen their hold.

Much is said of the poisonous effects of coal-tar products. If, however, we study closely the causes of the deaths they have produced, we shall find that in practically every instance the fatal results were due to their use either in excessive doses or in disorders in which experience has shown them to be contraindicated. In the recent analysis of 17 fatal cases collected by Kebler, Morgan and Rupp of the United States Bureau of Agriculture, for example, six are due to their use as antipyretics in acute infections. Now, in the light of late-day teachings the physicians who lost those cases would not again be misled by the term "antipyretic" applied to certain coal-tar products; no well-informed clinician uses these agents as antipyretics nowadays. Nor would those who applied them externally as antiseptics in the two cases of this class mentioned repeat the procedure, since experience has shown that they are readily absorbed. The fatal results due to excessive dosage with "orangeine," "bromo-seltzer," and the like, or to the cumulative action of too many doses within a given time, belong to the category of self-treatment by laymen and the free dispensing of proprietary drugs—features which stand outside the pale of professional responsibility, though well within the reach of legislation.

On the whole, the twenty-six years that the coal-tar derivatives have been in use, have taught us much concerning their physiological action, and particularly how to avoid untoward effects. Indeed, it is safe to say that if henceforth their use were limited strictly to physicians, the fatal cases would be practically *nil*. Especially would this be the case if the average dose of acetanilide given in the Pharmacopœia were reduced from 4 grains to $2\frac{1}{2}$ grains—an effective and safe dose in adults particularly if given with sodium bicarbonate.

¹ "Text-Book of Pharmacology," 2d edition, p. 348, 1908.

Finally, it is urged against the coal-tar derivatives that although they relieve pain they do not procure sleep. In the first place this is an error; they do induce somnolence, though this is much less marked than when opiates are used. But even were it true,—nothing prevents the simultaneous use of safe soporifics, such as the bromides or chloral hydrate. There is, in fact, a distinct advantage in their employment concomitantly, since the dose of either agent—acetanilide and ammonium bromide, let us say—can be made smaller, 2 grains of the former and 10 of the latter being quite sufficient in most cases to relieve pain and insure a prolonged sleep. Antipyrine and phenacetine are quite as efficient when thus administered, but somewhat larger doses, 4 grains, are needed. Though acetanilide is not soluble in water, it is readily suspended in syrupy mixtures, which will also take up ammonium bromide very readily.

Summarizing all these facts it seems plain that far from being harmful, in the hands of the profession, the coal-tar derivatives have furnished us the only means to avoid the use of the opiates which, notwithstanding the great service they have rendered humanity have left in their train victims in numbers untold, and the shadows of which hover at once before the modern practitioner's mind when he is called upon to alleviate suffering.

Cyclopædia of Current literature

ABDOMINAL SURGICAL SHOCK, NEW TREATMENT FOR.

The following directions, especially suitable for shock during the few days or hours following abdominal operations, are given by the author. Two skin sutures near the navel are removed and through the opening is inserted a glass tube joined by rubber tubing to a vessel containing saline at 112°. The tube should be inserted (the wound being held open, so that the omentum can be seen) and passed upward beneath the omentum to the posterior peritoneum up behind the transverse mesocolon, getting as near as possible to the solar plexus. About one pint of the hot saline is allowed to flow, and the irritation thus conveyed to the splanchnic nerves and sympathetic ganglia causes a marked rise in vascular pressure by vascular contraction. The tube is removed and the wound covered with

gauze and adhesive plaster, with a tight abdominal binder to sustain the pressure. In addition, 10 ounces of hot saline are injected into the rectum every two hours. Except the disturbance caused by these measures, the patient is kept absolutely quiet. The author claims that this is the proper way to give saline solution. Really a shock is produced by the sudden pressure of this hot solution on this great and important part of the vasomotor nerve mechanism, but this form of shock is a sudden reversal of the phenomena of surgical shock. When for any reason more than the normal heat or temperature occurs in the body it is a function of the vasomotor nerve mechanism to correct it. The elevation of temperature causes irritation of the splanchnic nerves, sympathetic ganglia, and vasomotor centers, and the heart beats faster while the peripheral vessels dilate.

The author does not believe that the ordinary method of using hot saline for shock is aimed at the real cause of the shock. It is of little value as compared with heat and pressure stimulation of the splanchnic nerves. J. H. Hopkins (Boston Medical and Surgical Journal, December 9, 1909).

ADRENAL INSUFFICIENCY IN INFECTIONS AND ITS TREATMENT.

Collapse of obscure origin sometimes occurs in the course of infectious diseases. The author believes that this accident, which not infrequently ends fatally, is to be explained on the basis of lesions of the suprarenal glands. He points to the success obtained with glandular extracts in such cases as affording evidence in favor of this view. The adrenals, when active, exert an angiotonic and antitoxic action, and suppression of their functions results in phenomena akin to those of fatigue. In infections complicated by adrenal insufficiency hæmorrhages into these organs have often been noted. If severe and bilateral, such hæmorrhages result in death. In the slowly progressing forms of adrenal failure, treatment by glandular extracts is also of great value. Such treatment is indicated as soon as asthenia and lowered blood-pressure appear. The author recommends the daily administration of two capsules of fresh suprarenal substance from sheep, finely divided and mixed with powdered sugar, or better, the use of adrenalin solution (1 to 1000) or of cachets containing glandular extract. In children 10 to 20 drops of the 1 to 1000 solution may be given daily, divided into 5 or 6 doses. Moizard (*Revue de thérapeutique*, January 1, 1910).

APPENDICITIS COMPLICATING PREGNANCY, LABOR, AND THE PUERPERIUM.

Pregnancy does not incite a primary attack of appendicitis, but recurrent attacks may be precipitated by pregnancy, labor, and the puerperium. Severe attacks may be confounded with puerperal infection of the uterus and its appendages. Mild attacks of appendicitis do not alter the course of pregnancy. Severe attacks commonly interrupt pregnancy and may lead to the death of the foetus either *in utero* or shortly after birth. Death of the foetus is ascribed to non-viability, toxæmia, and septicæmia.

A woman in the child-bearing period who has experienced one or more attacks of appendicitis should be operated because of the liability of a recurrent attack in the event of pregnancy. Mild cases do not demand operative intervention unless oft repeated in the course of pregnancy. Severe cases should be operated without delay. When occurring near the end of the period of gestation, or in labor, the pregnancy should be speedily terminated, immediately after which the appendix should be removed. Palmer Findley (*American Journal of Obstetrics*, December, 1909).

ASCITES, AUTOSEROTHERAPY IN.

The treatment of ascites by reinjection into the subcutaneous tissues of fluid obtained from the peritoneal cavity gives good results. The method is as follows: After sterilizing the skin surface and bringing about local anæsthesia with ethyl chloride, the needle of a sterile hypodermic syringe of 10 cubic centimeter capacity is introduced into the peritoneal cavity on the left side and a little of the ascitic fluid withdrawn. An assistant exerts pressure on the abdominal parietes if required. The syringe is then drawn

out until its point lies in the cellular tissues, when the contents are reinjected. Progressively larger doses of ascitic fluid are to be used (3, 5, 8 and 10 cubic centimeters). This procedure is repeated at intervals of six days and the treatment continued for two months. The method is painless and does not cause abscesses, local reaction or fever. The authors claim that it produces lasting polyuria, retards transudation into the peritoneum, and permits of discontinuing the milk diet. V. Audibert and F. Monges (*C. R. de la Société de Biologie*, November 27, 1909).

BACTERIN THERAPY.

After three years' experience with this method of treatment, the writer is convinced that the early claims as to its field of applicability and utility were exaggerated. He recognizes, however, its distinct value in a number of conditions. He has employed it in 106 cases, including 50 distinct diseases, and prepared autogenous bacterins from 11 different species of bacteria, including the ordinary pus cocci, *B. coli*, *B. proteus vulgaris*, *B. pyocyaneus*, the gonococcus, and *B. tuberculosis*. In the last two forms of infection stock bacterins were in some instances employed. The inoculations were in all cases used merely as an adjunct to the usual therapeutic measures, the author not being disposed to rely on bacterin therapy alone as a truly specific agent. Briefly stated, his conclusions, based on a careful study of this series of cases, are as follows: 1. Diffuse infections characterized by septicæmia, pyæmia and grave sapræmia contraindicate bacterin therapy. 2. In superficial acute and especially sub-acute and chronic processes it is beneficial or curative. 3. In acne vulgaris, furunculosis, carbunculosis and subcu-

taneous abscesses, brilliant results can be expected. 4. Subacute and chronic gonorrhœal and tuberculous affections are amenable to bacterial immunization, and because of the frequent impracticability of employing an autogenous bacterin, reliable stock preparations should be used. (In subacute and chronic gonorrhœal cases marked improvement or cure always occurred. Ultimate functional results were better than those obtained by any other method.) 5. Certain acute gonorrhœal infections can be benefited (*e.g.*, specific vulvovaginitis of children). 6. It is questionable whether tuberculin therapy should ever be employed in very acute tuberculosis. 7. The mixed infections in chronic tuberculous disease afford an important prospective field for alternating bacterial inoculations and tuberculin therapy. 8. Autogenous bacterins are always to be preferred to stock preparations. 9. Best results are obtained when the pus is recultured and a fresh bacterin prepared every two to four weeks. 10. It is best to increase the quantity of bacterin slowly and cautiously during successive inoculations, thereby avoiding hypersusceptibility or anaphylaxis. 11. Therapy by both bacterins and tuberculins can be satisfactorily executed by keen observance of the clinical symptomatology. Reliance on the opsonic index as a guide is unnecessary and often leads to erroneous conclusions owing to its variability. 12. Bacterin therapy, by virtue of its power of doing more harm than good when unskillfully managed, will probably not be generally employed by those unfamiliar with bacteriology or laboratory technique. 13. Therapy with bacterins made from *B. pyocyaneus* has been entirely useless. 14. Bacterins and tuberculins are not "cure-alls," but assist Nature in fortifying the bodily de-

fences, thereby diminishing complications and accelerating convalescence. B. A. Thomas (Journal American Medical Association, January 29, 1910).

CHILBLAINS, BIO-KINETIC TREATMENT OF.

The authors look upon chilblains as resulting from several conflicting irritative influences acting simultaneously on the extremities. Thus the influence of cold or sudden and repeated alternations of heat and cold on the one hand, may operate concomitantly with various organic irritative influences originating in the nasopharynx, teeth or gums, respiratory passages, digestive tract, thyroid gland, etc., on the other. Hence the treatment should include in the first place, those measures which are effective in allaying such organic disturbances. Next, in order to promote repair of the affected areas and to render the tissues firmer and more resistant, the authors recommend gymnastic exercises of the extremities, frequently repeated. At hourly intervals, if possible, the patient is to raise the arms vertically above the shoulders and hold them in this position for several minutes, at the same time executing rapid movements of complete flexion and extension with the hands and fingers. Corresponding movements of the lower limbs are also to be performed. The extremities should be protected from the cold. As a result of these measures the local asphyxia and softening of the tissues disappear in a very few days. After the raw surface of an open chilblain has become covered over in the process of repair, kneading of the part may be practiced with advantage. Jacquet and Jourdanet (*La médecine moderne*, January 15, 1910).

CÆCOSTOMY AND APPENDICOSTOMY, THERAPEUTIC ADAPTATIONS OF.

Upon the principle that disease within the colon calls for treatment addressed to the colon, these operations are now often performed at the request of medical men for the purpose of facilitating the treatment of certain otherwise intractable cases. This method of treatment is advantageous in that the deranged digestion due to remedies introduced into the stomach and the consequent impairment of general health are thereby avoided, and in that the uncertain action of remedies subjected to undeterminable chemical changes in the upper digestive tract need no longer be depended upon. Such operations are now being employed with success in the treatment of the following conditions: 1. Amoebic dysentery, in which they have opened the way to greater success in treatment than has ever been obtained before. 2. Chronic catarrhal and mucous colitis, cured more promptly and in larger percentage than by other treatment, as shown by the author's own cases. 3. Chronic constipation due to atony and not complicated with enteroposis, which is readily brought under control. 4. Acute septic peritonitis, in which, after operation, uniform success was obtained on opening the cæcum, flushing the colon, and then giving saline infusion by the drop method ("coloclysis"). 5. Defective flora of the colon, remedied by the introduction through the cæcal tube of bacilli, chiefly of the lactic acid series. 6. Autointoxication of intestinal origin, treated by repeated flushings of the colon through the cæcum, cures being obtained in cases of chronic headache, idiopathic epilepsy, rheumatoid arthritis, and pernicious anæmia. The author believes that the anatomy of the parts points to cæcos-

tomy rather than appendicostomy as the operation of choice, and that the establishment of colonic irrigation through the cæcum, whichever of the two methods be employed, is a procedure attended with the minimum of surgical risk. C. A. L. Reed (Transactions of Southern Surgical and Gynecological Association; New York Medical Journal, January 29, 1910).

CARDIAC IRRITABILITY, CLINICAL NOTES ON.

Strychnine is not a remedy of much value in these cases. On continued use in moderate doses, it is found to increase nervousness and cause wakefulness at night. The most immediate effects are obtained with caffeine and strophanthus. The former should be given as the citrate, the latter as tincture, and both in tablet-triturate, in which form they are less objectionable to the stomach. This is of practical importance, since gastric intolerance often accompanies functional cardiac disturbances. When palpitations are associated with facial flushing, headache and dizziness, nothing affords greater relief than caffeine citrate in $\frac{1}{2}$ to 1 grain doses, repeated in three hours or less. Cactus, which the author recommends in some instances, does not act as rapidly as caffeine, and should be reserved for patients in whom one wishes slower and more continuous effects. No local applications, such as cologne, camphor spirit, ammonia, mustard spirit, etc., have much beneficial effect at times unless caffeine be given internally. Quiet and rest, continuously and for weeks at a time, are all important. The diet should be light, nutritious, and easily assimilable. The evening meal should be of milk toast, crackers, arrowroot, blanc mange, custard, broths of meat, or light soups of other kinds (rice, potato, celery,

etc.), usually strained. It is wiser to avoid meat absolutely and even fish at the evening meal. Any gastric or intestinal intolerance is best permanently relieved with milk of bismuth. When it fails, or alternating with it after a few days' or weeks' use, one or two lactobacilline (lactic acid) tablets should be taken. At times these act marvellously, relieving headache, promoting sleep, and apparently reducing gastrointestinal auto-toxæmia; at other times they are without appreciable effect. The best nerve tonic in these cases is the glycerophosphate of lime and soda, combined in 5 to 10-grain doses, three or more times daily and preferably taken after eating. The patient should retire at 9. If a hypnotic is required, bromural is the least objectionable in 5 or even 10-grain doses. Gentle massage, especially of the lower limbs, before retiring, will often serve to bring on restful slumber. Beverley Robinson (American Journal of Clinical Medicine, February, 1910).

DIABETES, PHOSPHORIC ACID IN.

Phosphoric acid preparations are believed by the author to be valuable in the treatment of diabetic cachexia. He makes use of the following combination: Phosphoric acid, 5 grams (75 grains); acid sodium phosphate, 10 grams (150 grains); distilled water, 300 grams (10 ounces); one tablespoonful to be taken in a glass of water at every meal. The treatment may have to be discontinued if the digestion is disturbed. It is contraindicated by albuminuria and nephritis. Cautru (Journal de médecine de Paris, January 1, 1910).

DIABETES, RHYTHMICITY OF GLYCOSURIA IN.

The phenomena of diabetes fall under three different headings, according as the glycosuria, in the course of the

twenty-four hours, is observed to be intermittent, semi-continuous, or continuous. Glycosuria of the intermittent type appears only during the periods of digestive activity succeeding upon one or both of the substantial meals of the day, especially the evening meal; at all other periods of the day it is absent. Semi-continuous glycosuria refers to cases in which sugar is passed not only in the four-hour period or periods of digestive activity, but also in the succeeding hours, disappearing, however, in the interval between the two meals which are farthest separated in the twenty-four hours. In the continuous variety of glycosuria sugar is found in every sample of urine examined, but the influence of meals is none the less real, since the urine passed at the longest interval after a meal generally contains the least amount of sugar. In order to judge of the sugar eliminated, it is of course necessary to note the quantity of urine passed at these different periods. The possible existence of the two extreme conditions of intermittent or digestive glycosuria and continuous glycosuria, with which are associated corresponding variations in the degree of glycaemia, does not warrant, however, too sharp a distinction between the three groups of phenomena. The authors have observed a number of cases deserving an intermediate position and showing the stages of transition from one group into another. Whilst in many cases the glycosuric rhythm remains about the same for an indefinite period, others show a regular progression, favorable or unfavorable, through the various steps of the evolutionary scale. Gilbert and Lereboullet (*La médecine moderne*, January 15, 1910).

DIABETES, TREATMENT OF.

The author has administered iodide of calcium in 17 cases of diabetes with

marked benefit. In each of these cases the ordinary treatment with codeine, along with suitable diet, had proved more or less unsatisfactory. The details of three cases are given. In the first patient, who had a large leg ulcer, codeine, boric acid lotion, then potassium iodide and calcium chloride were tried without benefit; then calcium iodide was given in 5-grain doses thrice daily. The ulcer showed great improvement and later healed, while the percentage of sugar fell from 8 to 5, later to 1 and .5 per cent. In another instance, marked soreness of the vulva was almost entirely relieved by the drug. In all cases calcium iodide caused improvement in the subjective phenomena and diminished the amount of sugar in the urine. It was given in doses of 5 to 15 grains three times daily. H. E. Smith (*Practitioner*, February, 1910).

DIGALEN, ACTION OF.

It has been claimed that digalen does not produce the cumulative effects of the other digitalis preparations, probably because of its more rapid elimination, but recent experiments and clinical observations have shown that such is not always the case. Furthermore, the quantity of digitaline contained in the digalen exhibited must always be taken into account. In a case reported by D'Espine, in which digalen administered to a child caused untoward effects, the dose given, ten drops, was equivalent, according to Cloetta, to 0.00015 gram of crystallized digitaline (digitoxine); this dose having been given three times within 36 hours, the total amount was 0.00045 gram. Now, 0.00015 gram of digitaline corresponds in therapeutic activity to about 0.1 gram of powdered digitalis, an amount which might easily have been given to the child in the period

mentioned without producing bad effects. Gastric intolerance might, however, have been expected to appear, and in this respect digalen is unquestionably superior to the galenical preparations of digitalis. A. Mayor (*Revue médicale de la Suisse Romande*, January 20, 1910).

EUPHTHALMIN IN CATARACT.

In many cases of cataract, central opacity of the lens precedes cortical involvement. If the pupillary aperture be narrow, as is generally the case in the aged, vision is greatly interfered with by such central opacity, which blocks the entire pupil, and where the condition is bilateral, the patient is unable to read or write. The operation of preliminary iridectomy usually performed under these circumstances may be impossible for two reasons: 1. General disease contraindicating operation. 2. Refusal of the patient to be operated. For several years the author has successfully used in these cases euphtalmin hydrochlorate, which, by its mydriatic effect, permits of vision through the uninvolved cortical portions of the lens. A mydriatic used for such a purpose must be shown to be entirely harmless, since it may have to be used for several years. In the use of euphtalmin the author has observed no untoward effects. Intra-ocular tension is not affected, accommodation is but rarely and very slightly influenced, and there are no secondary intoxicating effects. Sometimes there is a slight burning sensation of the conjunctiva in the first half minute after use. Mydriasis begins in twenty minutes and lasts four hours with the 3 per cent., and seven hours with the 5 per cent. solution. To avoid the dazzling effect from the increased admission of light, the patient's ordinary glasses may be colored blue or greenish-yellow. The

drug must not be used after 6 P.M. One or two drops after breakfast enable the patient to read in the morning, and one or two at noon, in the succeeding afternoon hours. With this procedure persons previously debarred from all work may, in part at least, resume their former occupation. A. Dufour (*Revue médicale de la Suisse Romande*, January 20, 1910).

EXOPHTHALMIC GOITER AND ACUTE RHEUMATISM.

Acute articular rheumatism occupies an important place among the infectious diseases which lead to the development of exophthalmic goiter. The case is reported of a man of thirty in whom an acute rheumatic attack was followed by the development of Graves's disease, with goiter, exophthalmos, tachycardia, polyuria and paroxysmal sweating as symptoms. The fact that the patient and his parents were alcoholics is not sufficient to explain the production of this syndrome. It is probable that an accentuation or other disturbance of the thyroid function, by reacting on the nervous system—on the medulla, in particular,—may lead to the development of Graves's disease. Souques (*Bulletin médical*, January 26, 1910).

FÆCES, EXAMINATION OF, IN CLINICAL WORK.

Fæcal examinations are valuable in the following classes of conditions: 1. Disease of the tissues of the alimentary tract, including inflammation, ulceration, hæmorrhage. 2. Infection of this tract by bacteria or animal parasites. 3. Disordered function of the tract in the utilization, digestion and absorption of food products. The methods involved for the detection of all these conditions are sufficiently simple to be available

in routine practice. 1. Inflammatory disease is evidenced by mucus, seen macroscopically, or pus, discovered by microscopic examination. Inflammation or ulceration high in the colon is usually shown by greater admixture of food with the mucus and pus; the same condition in the lower colon, as in acute dysentery, is characterized by small, slimy stools, in which few if any food elements are present. Hæmorrhage into the alimentary tract is evidenced by the finding of blood in the stools, either macroscopically, microscopically or by the guaiac or benzidine tests. In making a chemical test it is advisable to exclude the vitiating influence of ingested meat by repeating the test, if positive, after two or three days of meat-free diet. 2. The presence of animal parasites is proven by the finding of segments, eggs, or the worm itself in the dejecta. The search for *amoebæ coli*, infusoria, and the staining test for tubercle bacilli are also well within the province of the regular practicing physician. 3. The author lays most stress on the third class of conditions—faults in dealing with food products. The food content of the fæces may be investigated macroscopically, microscopically, or by chemical quantitative methods. Chemical methods are not essential, however, in ascertaining the cause of an existing disorder or deciding on the dietetic and other treatment required. As a rule, the study of the food content should be made under the regimen of a special known diet. The physician should select a diet containing the three forms of food elements, proteid, carbohydrate and fat, in average amounts, and familiarize himself with the character of faecal food content the diet produces in normal individuals. By prescribing it in any given case, he can then readily and ac-

curately determine any marked deviation from normal in the functional capacity for dealing with each class of food substances. Vegetables yielding much cellulose, as lettuce, spinach, corn, peas, etc., are excluded from the diet, as their bulk interferes with the examination of other food residues. The diet is given for three or four days, and stools passed later than 36 hours after it was started, collected and examined, a record being kept as to their amount, general physical character, and nature of food content. Proteid residue consists of muscle fibers alone, which are readily recognized under the microscope by their morphology; carbohydrates remain as starch and potato grains, identified by adding a drop of Lugol's solution; while fats appear as neutral fat globules or masses, crystals of fatty acid, splinters of fatty acid or soap, and as masses of calcium or magnesium soap. Neutral fat is proven present by the addition of a drop of alcoholic Soudan III or Scharlach R. The recognition of all these elements is a simple matter when their microscopical appearance has once been learned. The faecal findings vary from the normal rather in the quantity of given residual food elements than in the character of the elements, and it is for this reason that a knowledge of the normal food content picture and the administration of a definite diet are necessary for accurate results. The author cites, as illustrations of the value of these methods, cases of persistent diarrhoea in adults, which condition is usually due either to (1) disease of the tissues of the alimentary tract, as colitis, dysentery, cancer or ulcer, or to (2) irritation by excessive food ingested. The finding of mucus, pus, or blood in the stools would show the first of these causes to be operative, and suggest appropriate treatment.

If such evidence is lacking, the second cause—abnormality of food content—should be looked for. Unless a great excess of some particular food element, as fat, be at once manifest in the ordinary stool, the test diet above mentioned should be prescribed, and a study of the faecal food content made in comparison with the normal on the same diet. Early differentiation between the two main causes of diarrhoea is thus rendered possible; the proper line of treatment differs materially in the two classes of cases. H. F. Hewes (Boston Medical and Surgical Journal, January 27, 1910).

FELON, TREATMENT OF.

The following procedure is advised in opening felons: The operator's hands and the instruments are sterilized according to the ordinary methods. Tincture of iodine is applied to the seat of operation. The author advocates cocaine local anæsthesia and mentions certain precautions to be observed. The solution of cocaine is prepared with boiled water in a sterile container. The patient should eat a substantial meal before the operation; if he is unable to eat, a cup of coffee at least should be taken. He is placed in the recumbent posture and forbidden to rise until one-half hour after the operation. Under these conditions the author has given as much as 0.12 gram (1½ grains) of cocaine without unpleasant results. Anæsthesia is brought about by injecting 1 per cent. cocaine in a circle at the root of the finger. As much as three or four grams (45 minims or 1 dram) of the solution can be used. When tactile sensation has disappeared—generally in five minutes, if the injection has been a success—the operation may be started. Anæsthesia will always persist long enough to permit of making a long and deep incision, care-

fully irrigating with hydrogen peroxide, and establishing adequate drainage. If the felon is of very small size the injection may be made around the affected area, but it must be 1 centimeter away from the margin of the lesion.

The operation should be performed as soon as the diagnosis is made, without waiting for the abscess to mature. The rest of the treatment includes bathing of the part in warm hydrogen peroxide (1 in 4), and the use of sterile compresses of the same solution. Appellmann (*La Presse médicale belge*, December 12, 1909; *Revue de thérapeutique*, January 15, 1910).

FIBROLYSIN AND ITS CONTRAINDICATIONS.

This substance is a soluble combination of thiosinamine and sodium salicylate. Its action on cicatricial tissue is outwardly manifested as congestion, swelling, and softening. This condition lasts but a short while, and in order to prolong the desired solvent effect on connective tissues, massage of the part is required. The remedy is best given by intramuscular injection in the dose of 2.3 cubic centimeters (35 minims) of the solution, repeated every other day. This dose corresponds to 0.20 grams (3.1 grains) of thiosinamine. The greatest disadvantage of the treatment lies in the fact that, along with the cicatricial tissue of recent origin which it is desired to influence, connective-tissue aggregations surrounding old infectious foci are also affected. Thus in a patient bearing encapsulated tuberculous lesions and treated for vicious scars resulting from burns, the use of fibrolysin might easily cause dormant tubercle bacilli to be set free and initiate an acute inflammatory process in the lung. The author believes that the untoward effects often com-

plained of by patients treated with fibrolysin are due to the breaking down of unrecognized cicatricial foci, citing as confirmatory evidence a personal case in which this treatment employed with a view to relieving painful intra-abdominal adhesions caused the vaccination scars to become inflamed. He therefore recommends a careful search for traces of previous inflammatory disturbances in the history of every case before beginning the use of fibrolysin, and the avoidance of this mode of treatment if such signs be discovered. S. Stocker (Correspondenz-Blatt für Schweizer Aerzte, December 15, 1909).

FISTULA IN THE POSTERIOR ANAL COMMISSURE.

The anatomical relations of the posterior anal commissure are such that ulcers or fistulas in this region often fail to granulate in a proper manner. The external sphincter muscle in passing around the anus forms a Y-shaped or triangular *cul-de-sac* at the posterior commissure, making this the weakest part of the anal circumference. Further, the levator ani muscle is separated from the coccygeus by a cellular interspace which renders possible an easy extension of pyogenic organisms. In ulcerations or small fistulas of the posterior anal commissure, it is the writer's custom to make a triangular incision with the apex toward the anus, rather than an antero-posterior cut. In fissures of this commissure, two incisions one-eighth of an inch deep are made into the sphincter muscle on each side of the fissure, all fibrous tissue being removed from the fissure itself. During defecation the lateral fibers of the sphincter forming the triangular space are at rest, owing to their division. Distention of this space is thus avoided and there is no inter-

ference with healing. J. Coles Brick (West Virginia Medical Journal, February, 1910).

HEART-BLOCK, DIGITALIS AND ATROPINE IN.

The vagus acts chiefly on the auricle. In partial heart-block the slowing of the auricular beat caused by digitalis causes still further slowing of the ventricular beat, though the ventricle is strengthened. Hence digitalis in large doses is fatal in partial heart-block. A similar condition is present in mitral stenosis. The laboring heart does not need further slowing, and digitalis, unless given in small doses, is dangerous. The action of atropine is the reverse of that of digitalis; it liberates impulses in the auricle. In total heart-block, the bundle of His being completely destroyed, the action of digitalis on the auricle does not extend to the ventricle and hence is not so disastrous. The difference between the auricular contractions at 100-140 per minute and the ventricular contractions at 80-40 may be lessened through the effect on the independently-acting ventricles, and may even disappear, the respective beats resuming the normal ratio of 70 to 70. H. A. Hare (Journal of the Medical Society of New Jersey, February, 1910).

HOOKWORM INFECTION, MILD.

We must recognize the fact that a patient may harbor anywhere from a single one to several thousand of these parasites. Mild infections have often been noted of late. Major Chamberlain found 44 per cent. of 147 soldiers to be infected, most of them showing little or no evidence of the disease. Out of fifty-six students in a southern medical college who were examined, twenty-one, or 38 per cent. were found infected. Careful weighing showed that the infected

averaged $142\frac{1}{2}$ pounds, the uninfected $150\frac{1}{2}$ pounds. Hæmoglobin estimation showed an average of 90 per cent. for the infected, 94 per cent. for the uninfected. Mild cases are not easily diagnosed. Eosinophilia fails to aid in the diagnosis; thus out of the twenty-one cases referred to, only seven showed over 5 per cent. eosinophiles. Examination of the fæces for eggs, which permits of easy diagnosis in all severe cases, fails in many of the mild cases when the ordinary technique is employed. In the above series, 14 per cent. of the cases were missed after several slides of each specimen had been examined by five different men. The presence of the eggs was only recognized after centrifugation of the specimens. The author recommends the following method in examining for hookworm eggs. Fæcal material is diluted ten or more times with water and centrifugated at high speed (2,500 to 3,000 revolutions per minute) for six or eight seconds. The supernatant fluid having been poured off the sediment is shaken with water and centrifugated again just long enough to throw all eggs to the bottom (usually two seconds, though this period should be determined by trying out the centrifuge on a known specimen). The supernatant fluid is poured off and the process repeated once or twice, until the washing removes little or no débris. The sediment is then taken out with a pipette and examined for eggs. A considerable amount of material not removed by the water can be gotten rid of with a solution of calcium chloride of 1050 specific gravity. If still better results are desired a purgative may be given, followed by milk diet for a day or two. Where only a few eggs are present it is necessary to examine large amounts of fæces. C. C. Bass (Louisville Monthly Journal of Medicine and Surgery, February, 1910).

LEPROSY, TREATMENT OF.

Great persistence in the use of remedies in this affection is enjoined by the author, who reports having observed cases of spontaneous recovery in the epidemic which lately prevailed in Esthonia. Treatment should be continued a long time after the last symptoms have disappeared. The oil of chaulmoogra frequently causes digestive disturbances and may be replaced with advantage by a saponified preparation of the oil, which is given in keratin-coated pills. The oil after purification can also be injected in doses of 1 gram three times a week. Nastin, a bacterial product of fatty nature prepared by Deyke, has given good results when injected hypodermically in doses of 1 cubic centimeter. Various methods of local treatment, including resorcin, chrysarobin, hydrogen peroxide, ichthyol, thiosinamine, pyrogallol, and baths, have also been tried with benefit. Kupffer (St. Petersburger medicinische Wochenschrift, Nos. 22 and 23, 1909).

MALIGNANT GROWTHS OF THE SIGMOID AND RECTUM.

Diagnosis.—The early apprehension of these growths rests with the family consultant, who should be on the watch for suspicious phenomena in this region, should make a careful analysis of the symptoms in cases of constipation or alternating diarrhoea and constipation, and should always be ready to make a local examination with the finger, or if this prove negative, with the proctoscope. Suspicion is aroused by soreness or pain in the lower bowel, borborygmus, cramps, diarrhoea, mucus, pus or blood (singly or combined), difficulty in completely evacuating the bowel, etc. Distention especially marked in the lower quadrant, with the history of having felt something

move after a change of position, and pain in the abdomen on a level with the tumor, are also suggestive. Later phenomena include loss of flesh, weakness, and pain in the sciatic region and calves of the legs. In massive tumors a feeling of hardness, occlusion of the lumen, and the irregular, excoriated or protruding center of the mass are almost always pathognomonic. In the presence of suspicious ulcers, growths or polypi, sections of the diseased tissue should be removed for diagnosis.

Treatment.—The author reports the results of thirty-two operated cases, and presents his views concerning the various surgical procedures available. In cases requiring immediate relief for distention due to temporary or permanent complete obstruction, the formation of an artificial anus is required. The question as to whether this opening is to be temporary or permanent is determined at operation by exploring the extent of the morbid invasion. In cases where immediate relief is not essential, the form of operation to be adopted depends upon the position of the growth and the surrounding infiltration. If in the upper sigmoid, excision and end-to-end or lateral iso- or anti-peristaltic anastomosis should be done. If in the lower sigmoid, the "intra-peritoneal" type of rectal excision, together with end-to-end suture, is also feasible; where anastomosis is too difficult, an artificial anus should be made in its stead. If in the rectum, some form of excision is indicated, unless the growth be firmly fixed to the sacrum and pelvic organs; the author would refuse excision even when the invasions of surrounding tissues might be considered of the non-malignant infiltrating type. Where excision is to be performed he suggests the advisability of a preliminary colostomy for the purpose of improving the

patient's chances of recovery after the excision. If the growth be in the lower rectum and anus, complete excision with high anal implantation should be performed where possible, providing a fair amount of control can be promised the patient; otherwise palliative treatment by means of drugs, together with curettage and cauterization, can alone be employed. In the case of sigmoid growths which cannot be removed, but where an area below the growth permitting of anastomosis exists, the junction may be accomplished in one of several ways: 1. Cæcum mobilized and brought down to make a sigmoidostomy. 2. Both portions of the bowel mobilized for the same purpose. 3. Transverse colosigmoidostomy. 4. Ileum brought down and anastomosed with the uninvaded sigmoid below the growth, or, 5, to the rectum itself. Cæcosigmoidostomy was done in two of the author's cases with success.

The making of an artificial anus has various disadvantages, but serves to relieve the fearful pressure pains and burning caused by these growths, and has a low mortality as compared with complete excision. The procedure is often followed by subsidence of the growth to such a degree as to lead us to change our opinions as to a radical operation and to recommend this less dangerous mode of interference. The author believes it a desirable expedient in all excision cases where there is inability to empty the bowels thoroughly before operation, and advises it for extra safety even where such evacuation is possible. Where there is a permanent artificial anus he recommends the use of some device fitting like a truss, with a rubber bag to receive the fecal and mucous discharges. Excoriations are prevented by care in cleaning the skin and the

use of a bland ointment. Protrusion of the intestine should be restrained by gauze or cotton plugs; if it becomes marked, resection may be necessary. J. F. Erdmann (New York Medical Journal, January 29, 1910).

MENOPAUSE, FACTORS INFLUENCING THE APPEARANCE OF THE.

From an analysis of two hundred cases the author reached the following conclusions: 1. Menstruation being dependent upon an ovarian secretion, it is fair to assume that the menopause is due to a change in the ovary. This theory is borne out by clinical facts, histological studies and animal experimentation. 2. The generally accepted statement that the menopause occurs at 42-45 years is incorrect, and 48-50 is nearer the actual age in the United States (these figures referring to the final uterine bleeding and not to the onset of the nervous disturbances which frequently precede it). 3. In women who have borne children the menopause occurs later than in the nulliparous. 4. It is probable that climate, nutrition and race play a definite part in the age at which the menopause appears. 5. Marriage, higher social status, and city life tend to prolong the menstrual function. 6. In about 90 per cent. of absolutely healthy women, the menopause occurs normally, but among average women fully 30 per cent. present symptoms which call for a careful gynecological and physical examination. C. C. Norris (New England Medical Monthly, January, 1910).

NEPHRITIS, CHRONIC INTERSTITIAL, TREATMENT OF.

The only way to attack the problem of diet in these cases is to observe carefully the condition of the urine as to albumin, urea and other waste-products, as well as

the condition of the patient when placed upon different diets. The quantity of urine secreted is greater upon a farinaceous or milk diet than upon a full diet, though according to the author's observations, more albumin is passed. Contrary to the opinion of many clinicians, he found that most patients did better on a fairly full diet combined with free elimination, being less liable to uræmic symptoms. In the middle of the day the patient may be allowed a little meat with short fiber, as mutton, chicken, game, etc., and in the morning or evening some fish. Vegetable food should be preferably of the farinaceous type. Milk may be freely given, unless the patient be averse to it, when water, especially alkaline water, is to be used. Alcohol, tobacco, tea, coffee, and highly seasoned foods are to be prohibited, though mild red wine may be allowed if the patient has been used to alcoholic beverages.

Hygienic regulations should include freedom from anxiety, limitation of mental and physical work, moderate amount of daily exercise, and residence in a warm, dry, and especially an equable climate. Free sudation by hot air baths, vapor baths, or hydrotherapy is valuable in maintaining the eliminatory function of the skin, but in using hydrotherapeutic measures every cause of renal congestion must be avoided. The application of hot air and cold water by unskilled attendants often aggravates the disease. For internal use laxative and chalybeate-alkaline waters are of value.

As for drug therapeutics, the author recommends the following: Iodide of sodium, 15 to 30 grains; phosphate of sodium, 30 to 45 grains; chloride of sodium, 90 grains; water, one quart; to be taken freely as a drink. It serves as an eliminant, modifies the state of the

albuminoid substances in the blood, and the iodide causes progressive lessening of contraction of the smaller arteries. In failing compensation digitalin may be given, combined with some vasodilator to reduce peripheral resistance. Nitrites may be given, at first in doses just sufficient to overcome excessive vascular tension, later in larger doses; but their effect is too transitory (nitroglycerine especially) to yield the best results. In bad cases, the author prefers opium, which, he states, has the advantages of acting with about the same rapidity as digitalis, strengthening the heart, rendering the pulse fuller, and at the same time dilating the arterioles. In the doses given (2 to 4 minims of the deodorized tincture) it does not seem to interfere with the elimination of wastes. The best vasodilator in chronic interstitial nephritis the author believes to be veratrine. In doses of 0.5 milligram (gr. $\frac{1}{134}$), repeated every half hour until the pulse is relaxed, it is perfectly safe and not depressing. It may be used for indefinite periods with certain and uniform effects. In the event of complications, the successive and even simultaneous use of stimulants, diuretics, purgatives and diaphoretics may be indicated. In marked dyspnoea, quebrachine hydrochlorate or aspidospermine will be found effective. When there is pronounced anæmia Basham's mixture or the triple arsenates with nuclein are of value. Purgatives are of great importance in the treatment, fulfilling three great indications: 1. Revulsion from the inflamed kidney. 2. Depletion of the vascular system. 3. Elimination. G. F. Butler (American Medical Compend, January, 1910).

NITRITES, THE VALUE OF.

These agents reduce vascular tension especially in the incipient or presclerotic

stage of arteriosclerosis, and are remarkably effective in relieving anginous pains. *Amyl nitrite* has an evanescent action, followed by a period of reaction with manifestly increased blood-pressure. *Nitroglycerin* has the same disadvantage, but is the remedy of choice in angina pectoris or hæmoptysis. In the latter morphine may be given in combination with it in order to obviate the increased tension of the reactive stage. In cases of presclerosis (early arteriosclerosis), nitroglycerin may be given for 10 days, and followed by the administration of theobromin for 10 days. Some success has been recorded from its use in symmetric asphyxia of the extremities, and in vertigo due to anæmia or Ménière's disease. *Erythrol tetranitrate* is less effective than nitroglycerin, but its action is more lasting. It is especially indicated in subjects of angina pectoris who are awakened in the night by the pains. *Sodium nitrite* yields less satisfactory results than the two last-named. It is prescribed in doses of 0.15 to 0.20 gram (2.3 to 3 grains). Huchard and Fiessinger (Journal des praticiens, December 11, 1909; Revue de thérapeutique, January 1, 1910).

PHENOLPHTHALEIN.

Clinical experience has shown that it is a safe cathartic, though poisoning has been known to occur after the administration of 15 grains. The author used it a number of times, however, in cases of interstitial nephritis without noting any ill effects. It usually acts without causing pain in about 6 hours, and its use is not followed by sluggishness of the bowels. According to his experience it sometimes loses its effect on continued use, several cases having been freely purged when the drug was first given, and later become refractory even to in-

creased doses. The drug is tasteless and inexpensive. It may be prescribed in powder, pill or capsule. A dose of 3 or 5 grains (0.19 to 0.32 gram) one, two or three times a day will purge the average patient. Five grains is as large a dose as it seems safe to give, especially since some patients possess an idiosyncrasy to phenol preparations. In prescribing it for a child, the author would begin with a small dose, say $\frac{1}{2}$ grain at night. In a few of his patients the prolonged use of phenolphthalein was followed by diarrhoea, in some instances lasting several days after the drug was discontinued. J. J. Gilbride (Journal American Medical Association, January 29, 1910).

PHLEGMON, DIFFUSE, SUCCESSFULLY TREATED WITHOUT OPERATION.

A slight excoriation of the foot in a young soldier suddenly gave rise to a diffuse phlegmon with gangrene, which progressed with alarming rapidity. A combination of three methods of treatment was employed: 1. Linear applications of thermo-cautery to the foot and leg. 2. Injections of hydrogen peroxide, nine in number, made circumferentially in the subcutaneous tissues of the limb, 1 or 2 centimeters above the margin of the infected area. 3. Bier treatment, an Esmarch rubber bandage being applied above the knee to induce venous stasis in the part. This method was used three times daily (two hours at each application) for the first two days, then twice daily for two days. Prompt results were obtained. On the second day the temperature showed a tendency to abate and on the third day fell to 101° F. On the sixth day it was 99.8° and on the eighteenth day remained normal both morning and evening. The local treatment included also daily bathing in warm per-

manganate solution and a wet dressing of hydrogen peroxide. The infected area healed perfectly and complete use of the limb was obtained. The author sees no advantage in making deep or intramuscular injections of hydrogen peroxide in such cases, but advises subcutaneous injections so disposed as to form a ring of the solution around the limb, offering an uninterrupted barrier to the spread of the infection through the lymphatics. H. Petit (Archives de médecine militaire, No. 12, 1909).

PLEURISY, SYPHILITIC.

The case is reported of a woman 38 years old who entered a hospital with what appeared to be an ordinary pleurisy. Albumin having been shown absent from the sputum and inoculation of a guinea-pig proving negative, the diagnosis of tuberculous pleurisy was rejected. The patient had contracted syphilis at the age of 22 and shown various tertiary manifestations; whence a syphilitic pleurisy was suspected. The pleural fluid was found to give a positive Wassermann reaction. Antisyphilitic treatment also pointed to the specific nature of the case, which rapidly recovered under mercurial injections. The authors have observed another case of this kind and are of the opinion that tertiary syphilitic pleurisy occurs more frequently than one is led to believe. In order to settle the question as to whether the deviation of the complement in such a case indicates the serous effusion to be of syphilitic origin, or whether it occurs merely because the patient is syphilitic, without pointing to any definite agency as responsible for the pleurisy, the authors blistered nine individuals suffering from secondary or tertiary syphilis and tested the serum obtained from the blisters. The result was positive in every case,

except one which had already received antiluetic treatment. Hence the authors conclude that all serous exudations in syphilitics cause deviation of the complement, and that a diagnosis of syphilitic pleurisy must be based on data other than the serum reaction. Roger and Sabaréanu (*Bulletin médical*, January 26, 1910).

PYELITIS IN INFANTS.

A curious fact in the history of pyelitis is the late discovery of its frequent occurrence in young infants. In the belief of many the infection is generally an ascending one. The author has observed nine cases in children ranging in age from nine months to $2\frac{1}{2}$ years. Eight of these were females. In six instances the condition developed in association with or following some form of intestinal disturbance, which the author believes to have been indirectly causative of the renal condition. One case was tuberculous, another followed an attack of malaria. In one case the pyelitis was apparently primary. Analysis of the symptoms shows that six cases had high fever, three had chills, one had pain and one tenderness in the right lumbar region. None vomited. In five cases there was frequent micturition, and in all the cases the urine was markedly acid. One case, after an initial chill, showed an abrupt rise of temperature to 105 degrees and pain in the side, closely resembling pneumonia. In two instances the temperature did not exceed 102 degrees. The case with malarial history had a chill on three successive mornings with temperature of 104 degrees in the afternoons, and the failure of quinine to end the fever led to discovery of the pyelitis. The impression left from a study of the cases is that of a very indefinite picture, the only common symptom

being fever, and the diagnosis depends on the urinary findings. Pyelitis must be differentiated from cystitis, but it is questionable whether any reliance can be placed on the differences between the epithelial cells. In all cases, pus was abundant. Microscopically were found also epithelial cells and in a few instances some blood corpuscles; no casts. The amount of albumin did not appear to be greater than could be accounted for by the pus and blood. From these instances the author draws two conclusions: 1. Many cases of surgical kidney or of obscure Bright's disease in young people may have originated in a pyelitis in infancy. 2. Pyelitis should be borne in mind when confronting an obscure fever in an infant. As for treatment, urotropin gives uniform and rapid results. In very young infants $\frac{1}{2}$ to $\frac{3}{4}$ grain every two hours, during the day only, is sufficient. Older children can take two grains every two hours. Some writers advocate alkaline treatment, but this appears to the author irrational, as the colon bacillus grows more actively and virulently in an alkaline or neutral medium than in an acid one. T. N. Gray (*Journal of the Medical Society of New Jersey*, February, 1910).

SODIUM SALICYLATE IN CORYZA AND TONSILLITIS.

The author has used this drug for twenty years in the treatment of various affections of the upper respiratory tract. He states that it will cause a coryza to abort if taken within 24 or 36 hours. If given later it produces improvement in the unpleasant associated symptoms and shortens the duration of the attack. Sodium salicylate also gives good results in hay fever and in the chronic coryza-like condition observed in gouty subjects. In acute inflammatory throat conditions

the drug causes rapid disappearance of the pain, and may entirely eradicate mild attacks of tonsillitis. Cases in which the remedy will do no good are relatively rare. It is to be prescribed in solution or in powders to be dissolved in a half glassful of sweetened water; never in cachets. A single dose of 0.50 gram ($7\frac{1}{2}$ grains) is often sufficient to cut short a cold at the outset. In tonsillitis 1 to 2 grams (15 to 30 grains) may be given daily; improvement is rapid, and should be noticeable in 24 hours or less. The writer recommends that the drug be given always in small, frequently repeated doses, and that every 0.55 gram be dissolved in $\frac{1}{2}$ to $\frac{3}{4}$ glassful of water. It should always be taken when food-material is still present in the stomach and never when the latter is empty. A. Courtade (*Revue de thérapeutique*, January 1, 1910).

SPLENIC ENLARGEMENTS, PRIMARY, TREATMENT OF.

Iron and arsenic, which exert a specific action in certain forms of anæmia (including lymphoma, lymphosarcoma, Hodgkins's disease, etc.), do not have a similar effect in primary splenic enlargements. Iron increases the percentage of hæmoglobin, which is continually being lowered by dyscrasic hæmorrhages, and when combined with arsenic improves the general condition of the blood; but its effects are not lasting. Iodine is practically useless, and glandular and marrow extracts have likewise given uncertain results. X-ray treatment causes general improvement in cases of Banti's disease. The splenic tumor decreases in size and the hæmoglobin percentage rises; contrary to the effect observed in spleno-myelogenous leukæmia, the number of white corpuscles is increased. The rays should be applied

over the entire surface of the spleen and projected through a screen of aluminium to avoid inflammation of the skin. Unfortunately the X-rays produce but temporary improvement, except in cases of infantile splenic anæmia, and the more radical treatment of splenectomy is to be preferred. The latter removes the cause of the disease and gives successful results even when performed at a late period. Cure may be obtained in cases of tuberculous splenic enlargement, when the process is strictly localized; under such circumstances general methods of treatment must also be employed to prevent the bacillus from invading the entire organism. C. Bozzolo (*La Nuova Rivista Clinicoterapeutica*, October, 1909; *Revue de thérapeutique*, January 15, 1910).

UPPER ABDOMINAL DISEASE, DIAGNOSIS OF.

Until very recently diseases of the upper abdomen were but rarely diagnosed before the occurrence of a complication, the surgery of the organs of this region having lagged far behind that of the pelvic organs or the appendix. Careful history taking is of prime importance in all these cases, the data thereby obtained carrying far greater weight than the information furnished by physical signs. While gall-stone disease is a striking example of delayed diagnosis, yet it is certain that almost every person affected with this condition suffers more or less continuously. In practically every case in which the author has operated, the patient has given a history of long-standing dyspepsia, capricious appetite, constipation, marked flatulence largely independent of meals, together with discomfort on an empty stomach and comparative comfort only at night after taking a little food. If the condition is allowed to go on acute attacks of pain in

the right upper abdomen may appear, and finally unmistakable biliary colic. A sensation of chilliness accompanying the symptoms mentioned is characteristic. One should not be deceived because these symptoms occur in persons below middle age, careful studies of over 400 of the author's cases having shown that gallstone disease begins in most cases before the fortieth year and often much earlier. He believes that the term "gallstone dyspepsia" is justifiable, and that such a diagnosis could be made oftener than is now done.

Subacute and chronic gastric and duodenal ulcers also often remain unrecognized for years, though the author believes that no case of gastric ulcer need remain obscure until a copious hæmorrhage reveals it all too plainly. In a person below middle age, persistent and grave dyspepsia should always lead us to think, not of a functional disease, but of one dependent on well-marked pathologic changes. In addition to the signs usually described, anorexia, or marked capriciousness of appetite, is a common symptom in occult gastric ulcer. In all cases, however, continued emaciation and apparent inability to absorb food even when ingested are noted. The pain and anorexia are both unrelieved by ordinary remedies. The patients, because of continual suffering or discomfort, become unable to work or even to enjoy leisure. Duodenal ulcer is of more frequent occurrence than formerly supposed, recent clinical investigations by Mayo and others having shown that it is found almost as often as gastric ulcer. It is more occult in its signs than the latter, and may give very vague symptoms for a long time. In a general way its symptoms are analogous to those of similar lesions in the stomach. The pain, however, shows itself in two forms: 1.

"Classical" type, pain coming on after eating but at a somewhat longer and more variable interval after the food reaches the stomach. 2. "Hunger pain," described by Mayo Robson, the patient being uncomfortable unless the stomach has some food in it, and resting better at night if food is taken before retiring. Pain of any variety is seldom referred in duodenal ulcer, and vomiting, especially of blood, is rare. Rigidity and tenderness are early symptoms.

The initial symptoms of all diseases of the upper abdominal organs are in many ways similar, and the differential diagnosis between gastric and duodenal ulcer and gallstones is often impossible. Dyspepsia is present early in each of these conditions, though it varies somewhat in type. In gallstone disease the patient has an appetite but is afraid to eat, while in gastric ulcer anorexia is always present at some time or other; cases of duodenal ulcer are variable in this respect. Vomiting is far more frequent in ulcerative disease of either type; in gallstone disease it usually appears late, in association with biliary colic. In ulcer there is marked early tenderness and sharply localized pain, which is dependent either on ingestion of food or entire emptying of the stomach. In gallstones there is a sense of constriction rather than actual pain, often accompanied by chilliness; the whole right side seems stiff and sore, and moderate tenderness is often noted on deep pressure beneath the right costal margin. Jaundice, hæmatemesis, etc., as well as laboratory methods, are alike practically valueless for purposes of early diagnosis. Adhesions involving any or all of the organs of this region may also prove confusing in the diagnosis, as they may cause symptoms simulating those of disease of these organs. The author has

seen pericholecystic adhesions give the whole syndrome of gallstones. In the absence of any history of previous peritoneal inflammation or operation, there is no known method of differential diagnosis. The appendix should also be remembered as sometimes producing symptoms entirely referable to the upper abdomen.

As for gastric carcinoma, its diagnosis in the incipient stage is impossible. Hence it is best to operate on an uncertain diagnosis rather than let the patient pass beyond our power to relieve him. Middle age, loss of weight and strength, with perhaps some dull epigastric pain, constitute the danger signal. If, in spite of six or eight weeks' careful treatment, the symptoms increase in severity, the loss of weight becomes more out of proportion to the dyspepsia, the appetite leaves, and some anæmia appears, a diagnosis of probable malignancy is justified, and prompt surgical interference indicated.

The recognition of pancreatic disease, except acute pancreatitis, is still a matter of great uncertainty, and even the acute condition is hard to differentiate clinically at the onset. Yet there are two good reasons for surgical intervention in cases of incipient, sclerosing pancreatitis: the possibility of malignancy, and the frequent occurrence of fatal diabetes. The Cammidge reaction is uncertain, though the author considers it of some value.

Perforative peritonitis he also includes among the diseases of the upper abdomen often diagnosed too late, as the symptoms usually looked for, shock, rapid pulse, exquisite tenderness, etc.; do not come on immediately after a perforation takes place, but only after several hours. The most valuable signs of perforation are agonizing pain, and rigidity of the

abdominal muscles, including the diaphragm. A short catchy respiration is characteristic. The pulse is often slow and of good volume until toxæmia of peritoneal origin has been established. The value of shock as an early sign of perforation has been over-emphasized. J. B. Deaver (*Journal American Medical Association*, January 29, 1910).

X-RAY DIAGNOSIS, RECENT ADVANCES IN.

The author discusses the conditions of the thoracic and abdominal viscera which can be revealed by the X-rays. Recent progress in this field has been made by the use of short exposures, which eliminate the normal motion of these viscera and permit of greater definiteness and detail in the shadows obtained. This is an essential advantage even in the study of lung conditions, since suspended respiration is not sufficient to eliminate motion of these organs, the heart's pulsations being communicated to them. Though an earlier diagnosis of pulmonary tuberculosis cannot be secured by the X-ray method alone, it contributes to an earlier diagnosis by adding definite data to the clinical picture. In the frequent cases where the symptoms and even the tubercle bacillus point to a pulmonary lesion but no physical signs are demonstrable, the Roentgen rays will show peribronchial infiltration or enlarged bronchial glands. An accurate determination of the extent of a tuberculous lesion is also rendered possible. At any depth within the lung, cavities and areas of consolidation and infiltration can be located; dilated bronchi can be distinguished from localized empyemata. Without the lung, localized areas of pyothorax and pneumothorax can be detected, together with displacements of

the thoracic viscera resulting from lung conditions.

Pericardial thickenings or effusions and changes in the position or outline of the heart and great vessels are also demonstrated. One of the earliest applications of X-ray diagnosis was in the study of thoracic aneurysms. It has lately been shown that the pathological forms of the heart produced by combat with lesions within are each characteristic of the particular lesions. This will undoubtedly give us a means later of determining not only the lesion present, but also the extent to which compensation has been developed.

The study of the alimentary canal by this method has added much to our anatomical and physiological knowledge. The true shape and position of the stomach in health and disease have been ascertained. It has been found that the rate of passage for different kinds of food from the stomach varies widely, and that the peristaltic wave varies in form not only in health and disease, but also with the character of food ingested. These new facts are utilized in the diagnosis of abnormal conditions. Definite conclusions are reached by noting the amount of residue from the bismuth meal after the normal period for emptying of the stomach has elapsed and by studying the character of the peristaltic waves. Thus, given a stomach normal in shape but which fails to empty itself in the normal time, a study of the peristaltic waves in its wall allows us to determine whether the condition is due to pyloric obstruction or to gastroparesis. If the peristaltic waves are found to be forceful in character, the motor insufficiency is due to pyloric stenosis, spastic or organic. If the peristaltic waves are weak, as in a gastroparetic stomach with motor insufficiency, atony is shown

to be responsible. The motor insufficiency of a stomach the seat of gastroparesis can be shown to be due to pyloric stenosis. Pathological changes in the shape of the stomach caused by contraction of scar tissue are also readily detected. Malignant disease has been demonstrated by its invasion of the stomach cavity and the resultant changes in the peristaltic waves. Intestinal ptoses, especially of the hepatic flexure, have been found to occur very often, but their pathological significance is not understood. C. L. Leonard (*New York Medical Journal*, January 29, 1910).

X-RAYS IN DIABETES.

The authors observed that the employment of the X-rays over the hepatic region had a marked effect on the progress of the disease. At first glycosuria is increased and the number of erythrocytes diminished. Later the glycosuria falls to a lower level than before the treatment, and the erythrocytic count rises. In a case in which diet and opotherapy had failed, the X-ray treatment caused a reduction of 400 grams in the amount of sugar passed per diem. The method was found effective particularly in grave forms associated with emaciation and general debility. In cases of mild glycosuria and those of the obese type the influence exerted was less marked, and longer exposures were required to produce the results above described. When small doses of the rays were employed, an immediate increase in the red blood-cells was sometimes noted. The variability in results is ascribed by the authors to varying sensitiveness of patients to the rays. Ménétrier, A. Touraine and R. Mallet (*Tribune médicale*, December 4 and 11, 1909).

Clinical Summary

Of all practical articles and abstracts that have appeared this year in the *Monthly Cyclopædia and Medical Bulletin*.

Addison's Disease. TREATMENT. Begin with 3 grains of desiccated adrenal gland three times daily after meals, and gradually increase the dose till temperature and pulse become normal; then maintain last dose. *Sajous.* 75

Adrenals, Diseases of. DIAGNOSIS. Adrenal insufficiency is suggested by: 1. Circulatory disturbances (small pulse, low tension, tachycardia, chilliness, white line). 2. Digestive disturbances (anorexia, vomiting, diarrhoea or constipation). 3. Nervous disturbances due to toxic irritation of plexuses around adrenals. 4. General disturbances (anæmia, emaciation, progressive amyotrophy). Diagnosis confirmed by benefit from organotherapy. *Boinet.* 27

Anæmia. TREATMENT. Seven cases of severe anæmia greatly benefited by transfusion of only 5 cubic centimeters (75 minims) of human blood. No benefit in cases of leukæmia. Transfusion of this amount generally harmless, though blood from certain persons showed some toxicity. *Weber.* 63

Angina Pectoris. DIAGNOSIS. Presence or absence of signs of organic disease at root of aorta should be ascertained. Signs of general arterial or aortic disease coexisting with history of precordial pain warrant diagnosis. A slight harsh clicking sound accompanying or following the sound of aortic closure, suggesting to the ear a roughening of the aortic cusps, is of value in the diagnosis. *Butler.* 22

Ankylosis. TREATMENT. Fibrolysin used with benefit in joints ankylosed as result of rheumatic affections. Single dose used was 2.3 cubic centimeters (37 minims) subcutaneously, sometimes more; largest total amount given was 117.3 cubic centimeters (4 ounces). Untoward effects: sometimes sensation of fatigue on day of injection, and occasionally slight local inflammatory reaction, which disappeared with moist dressings. Best results where ankylosis due to extra-articular connective tissue; less improvement in presence of pus and in gonorrhœal cases. Used in conjunction with hygienic and dietetic measures, warm sulphur baths, and later active and passive movements. *Knotz.* 124

Arteriosclerosis. DIAGNOSIS. Careful ophthalmoscopic examination frequently reveals the earliest signs of arteriosclerosis. *Bruncr.* 23

Most prominent signs of beginning arteriosclerosis: Subjective: fatigue on slight exertion, abnormal sensation in the limbs with

some difficulty of movement, slight pains here and there; flushed face, slight headache, insomnia, vertigo, slight loss of hearing; altered disposition; cardiac palpitation. Objective: vascular hypertension, accentuated second sound, without evident brain, kidney, or heart disease; pulse slower when standing than recumbent; thickening of retinal arteries with compression of retinal veins; trace of albumin in urine. Palpably hardened arteries are oftenest present in cases due to heavy physical labor, gout, rheumatism, and typhoid. 1

TREATMENT. Quiet and regular life, avoiding sudden exertions, overwork, and nervous excitement. Dry, inland climate best, with altitude not over 3,000 feet. Moderate exercise in the fresh air, carried only to point of slight perspiration. Diet: Carefully maintain general nutrition. Avoid stimulants and reduce meats. Best diet consists of milk, buttermilk, fresh and stewed fruits, vegetables, cereals, moderate amount of fats (preferably vegetable), stale bread. Physical measures: Massage, vibration to spinal region, and abdominal kneading. Electric light baths. Electricity valuable in 2 forms: 1. High frequency current, 10 to 20 minutes at a sitting, promotes elimination and lowers arterial tension. 2. Static current to the epigastrium, most useful where poor nutrition. Hydrotherapy very valuable; temperature of water is gradually reduced, reactive capacity of patient being studied.

Drugs: 1. Iodides of potassium, sodium and strontium in very small doses, with sodium or potassium bicarbonate. 2. Thyroid in small doses arrests progress of the trouble. 3. Course of mercurials every 2 to 4 weeks, preferably blue mass. 4. Lactic acid preparations, especially soured milk, buttermilk or lacto-bacillary tablets. 5. Iron, arsenic and malt where tonics needed. 6. Vasodilators (nitrites, nitroglycerin, sweet spirits of nitre). Where compensatory hypertrophy, keep pressure down just sufficiently to prevent dangerous complications. Where high tension with failing compensation, sparteine, blue mass and vasodilators useful. Prolonged lowering of blood-pressure is to be obtained by non-medical measures. *Pope.* 82

Asphyxia. TREATMENT. Adrenalin, slowly administered intravenously; 10 drops of 1:1000 solution in 1 drachm of saline solution. Artificial respiration. *Sajous.* 75

Asthma. TREATMENT. To arrest paroxysms, adrenalin (5 to 10 minims of 1:1000 solution in 1 drachm of normal saline) may

be slowly injected into a superficial vein or hypodermically. *Sajous*. 75

Bronchitis, Chronic. TREATMENT. 1. Potassium iodide combined with syrup of hydriodic acid; may be alternated with terpin hydrate. Creosote is also valuable; combined with whiskey and glycerin it will rarely disagree with the patient. 2. Sedatives or anodynes to be avoided. The least objectionable are bromides, henbane, or codeine. Where dyspnea or nervous irritability, Hoffmann's anodyne, with the iodide. 3. A mercurial followed by salts, once a week or oftener, reduces cough and expectoration for a time. 4. Persistent counter-irritation to the chest, using compound tincture of iodine; occasional intermissions when skin becomes tender. 5. Inhalations of a mixture of equal parts creosote, alcohol and spirit of chloroform, using perforated zinc inhaler. 6. Patient should not be housed. Change of climate where practicable; preferably to Georgia in winter, Adirondacks in summer. *B. Robinson*. 88

Carcinoma. TREATMENT. Quinine, stirred with water to a paste, used locally in cases of epithelioma where operation refused. Application repeated four times on alternate days. Caustic action at first exerted on ulcers, which later healed completely under simple iodoform dressing. Also useful in palliative treatment of inoperable uterine cancer. The remedy is of diagnostic value, as on ordinary erosions it does not have the destructive effect produced on cancer. *Stron *. 94

The use of high-frequency currents found valuable in treatment of malignant growths, denuded surfaces, slowly healing wounds, and tuberculosis. On epitheliomas they exert a selective cytolytic action. Infected glands disappear, and discharge becomes odorless. Current has an analgesic effect. Time of application should never exceed 10 minutes. For internal growths current is used after operation to promote cicatrization. *Rivi re*. 124

Acetone used in palliative treatment of 15 cases of inoperable uterine cancer. Hardens the tissues and stops hemorrhage, septic absorption, and odor. After curetting under ether, solution of acetone is poured into the cavity through a conical speculum, contact with normal vaginal tissues being avoided. Hips elevated. Excess drained off through speculum and subsequently by tampon. When discharge begins again treatment is repeated without ether. Pain was not relieved but marked relief obtained from general infection. *Toovey*. 122

Cholecystitis. TREATMENT. Irrigation with normal saline solution, at the rate of about six drops per second and with elevation of one foot, of biliary fistule, after drainage of gall-bladder for cholecystitis, cholelithiasis or cholangitis: 1. Produces prompt diuresis. 2. Hastens disappearance of chronic jaundice. 3. Often relieves post-operative biliary vomiting. *McArthur*. 87

Collapse from H morrhage. TREATMENT. Suprarenalin or adrenalin given very slowly by intravenous method. Use 5 minims of the 1:1000 solution to a pint of warm saline solution (105  F.). In urgent cases, 10 drops may be given in 1 dram of saline solution, and repeated at intervals until heart responds. Artificial respiration hastens effects. *Sajous*. 75

Delirium Tremens. TREATMENT. Veronal used in 100 cases, and all but 3 benefited. Initial dose of 1 gram (15 grains) in incipient cases, repeated in 3 hours if sleep does not follow. Sleep then usually lasts 6 to 8 hours and on waking patient is quiet and feels well. If tremor is still present, 0.5 gram (7½ grains) veronal may be given. The same dose every evening prevents insomnia. Where delirium is not controlled by the first 2 grams, another gram may be given 5 to 6 hours after the second dose. One case of veronal rash noted. *M ller*. 88

Diarrh ea, Dyspeptic, of Infancy. TREATMENT. Calomel, one grain in broken doses, followed in 2 hours by castor oil, one dram. Daily irrigation of colon. If much vomiting, wash out stomach and colon, and follow by starch enema not exceeding 2 ounces. For two days give barley water, 2 fluidounces every 2 hours; for next two days, whey, 2 fluidounces every 2 hours. *Hollopeter*. 97

Drowning. TREATMENT. Adrenalin, 10 drops of 1:1000 solution in 1 dram of saline solution, slowly administered intravenously. Repeated at intervals until heart responds. Artificial respiration. *Sajous*. 75

Dyspepsia of Old Age. DIAGNOSIS. Of every 100 cases in persons over 65 years of age, 66 are secondary to organic disease of some important organ (kidneys, prostate, heart, lungs, liver, pancreas, chronic gout, etc.); 34 are due to degeneration of gastric and intestinal secretory structures. *Fenwick*. 24

Emissions, Nocturnal. TREATMENT. Styptol (cotarnine phthalate) found to prolong interval between emissions to from one to three weeks in all cases. Two, then three, styptol tablets of ¼ gram each administered before retiring, for a month. Fluidextract of hydrastis, 40 to 60 drops before retiring, also recommended. *J. Koenig*. 127

Epilepsy. TREATMENT. Diet low in proteids caused reduction in number of seizures by 14 per cent. Each of the three daily meals given consisted of 125 grams of bread, 16 grams of butter, and 250 cubic centimeters of milk. *Rosanoff*. 89

Epilepsy. TREATMENT. Exploratory trephining advised in all cases of epilepsy of traumatic origin. Eleven cases operated, four of idiopathic and seven of surgical epilepsy. Cysts found in two instances, cicatrices in four, and oedema of pia in all. Improvement resulted in all the cases from removal of oedematous fluid. Epileptic attacks returned in four cases. *Tilmann*. 127

Hæmatocoele. TREATMENT. Every hæmatocoele should be removed by early operation. Abdominal route with Pfannenstiel's incision affords clearest view of parts. *Esch.* 62

Hæmorrhage. TREATMENT. Adrenal preparations valuable in capillary hæmorrhage from pharyngeal, œsophageal, gastric or intestinal mucous membranes. Mastication of tablets of adrenal substance, or ingestion of 5-grain capsules of same, causes vaso-constriction. *Sajous.* 75

Heart, Dilatation of. TREATMENT. In asthenic cardiac disorders with dilated right ventricle, dyspnoea and possibly cyanosis and œdema, the adrenal principle improves oxidation and metabolism in the cardiovascular muscles and tissues at large. Tablets of $\frac{1}{2}$ to 2 grains of desiccated gland after meals. *Sajous.* 75

Hernia. TREATMENT. A truss never cures a hernia in adult life, and rarely during childhood. Losses from disability due to hernia avoided only by early radical operation. *A. O. Wood.* 20

High Enemata. Only where the sigmoid is abnormally developed can a soft rubber tube be introduced higher than six or seven inches in rectum. Short tube six inches long best for all sorts of enemata when using water for fæcal evacuation. It is possible to cleanse entire colon by using a short tube of $\frac{1}{2}$ inch caliber. *Soper.* 61

Hyperchlorhydria. DIAGNOSIS. Excess of free HCl alone does not warrant a diagnosis of primary hyperchlorhydria, which shows variable symptoms, both gastro-intestinal and nervous. Though 31.6 per cent. had lost weight, the appetite was generally good and examination of the gastric contents and fæces showed that digestive power was but little impaired. The nervous manifestations included periods of depression and mental confusion, irritability, various phobias, numbness, paræsthesias, and attacks of faintness. Male sex and constant mental strain seemed to be predisposing factors. *G. M. Piersol.* 65

Incontinence of Urine. TREATMENT. In persistent or increasing incontinence following labor operation is usually necessary. In the average case the Frank operation, combined with anterior and posterior colporrhaphy and an appropriate operation for retroversion when required, will bring about a cure. In marked dilatation of the urethra of long standing or where the muscular wall of the neck of the bladder and urethra have atrophied, Gersuny's operation offers best hope of cure. *Miller.* 90

Infant Feeding. Salts of cow's milk sometimes cause tendency to convulsions; treat by temporary salt-free diet. Sugar intoxication or intolerance of fats may likewise exist; treat by elimination of these from diet. *Neff.* 24

Intussusception. TREATMENT. Lateral anastomosis performed in 2 acute cases and advocated in preference to resection because of its comparative simplicity and safety. Tumor was found to disappear subsequent to operation. Not applicable, however, to gangrenous cases. *Parry.* 125

Iodine. As skin disinfectant. Some hours before operation field is shaved dry and painted with 10 or 12 per cent. tincture of iodine. Dry sterile dressing. Painting repeated on operating table. Author shaves and thoroughly cleanses skin 12 hours before iodine applied. Primary union in every case. *Jewett.* 63

Lupus Erythematosus. TREATMENT. Constitutional: regulation of diet to avoid overloading intestine; coffee or tea contraindicated; quinine often useful. Local: in hyperæmic stage, cooling lotions and ointment of subacetate of lead, ichthylol lotion or ointment; in chronic cases, strong solution of ichthylol or iodine liniment; in severe conditions, linear scarification or light touches of thermocautery. High-frequency currents in subacute cases, Finsen light, X-rays or radium in chronic cases; particularly useful where thickening of the integument. *Morris.* 63

Nausea, Postanæsthetic. TREATMENT. Olive oil given by mouth in thirty cases of ether anaesthesia, after partial restoration of consciousness. In only one patient was nausea observed after its use. Where nausea had already begun it was at once checked by administration of the oil. *Graham.* 91

Nephritis, Acute. SURGICAL TREATMENT. Case of severe acute nephritis in a man 25 years of age, with no urine passed for 5 days, saved by decapsulation of both kidneys (Edebohl's operation). A few hours after operation both kidneys resumed function. *Karo.* 43

Neuralgia. TREATMENT. One to two grains of 1 : 1000 adrenalin ointment applied to skin over affected area in neuralgia and neuritis produces ischæmia of the hyperæmic nerves and thus arrests pain. *Sajous.* 76

Obesity. TREATMENT. Strict vegetable diet for 4 to 6 weeks, then 150 to 200 grams of lean boiled meat 3 times a week or once daily. This diet kept up for months, and tends to protect from returning corpulence. If weight begins to increase, drop meat again for 4 to 6 weeks. Such diet best corrects obese tendencies without impairing general health. Supplement by exercises and hydrotherapeutic measures. *Atbu.* 25

Ophthalmia Neonatorum. TREATMENT. 1. Irrigation with warm boric acid solution every $\frac{1}{2}$ hour or hour. 2. Constant application of cold by small dabs of lint or cotton soaked in 1 : 2000 bichloride of mercury solution, kept cold over cracked ice. 3. Once or twice daily nitrate of silver (gr. v to f3j)

gently applied to everted lids; excess precipitated by normal salt solution. If cornea becomes hazy, instil several times daily:—

R. *Physostigminæ sulphatis*, gr. ij.

Quininae hydrochloridi, gr. x.

Aquæ camphoræ,

Aquæ destillatæ, of each, fʒij.—*M.*

If cornea begins to ulcerate: 1. Instil atropine (gr. j to fʒij) twice or three times daily. 2. Apply trichloroacetic acid (5 per cent.) to the ulcer once daily. 3. Give gray powder or calomel internally, or mercurial inunctions. Corneal involvement contraindicates cold applications. Continue treatment even after active symptoms have disappeared, though strength of silver nitrate solution may be reduced. Where but one eye involved, try to prevent extension by Buller's shield over unaffected eye, fastened by adhesive plaster but left free below. *Fox.* 35

Osteomalacia. TREATMENT. In a case of non-puerperal osteomalacia, after two years in bed and failure of all other measures, suprarenal extract given according to Bossi's technique. From 8 to 10 injections of 1 cubic centimeter made each month. By the thirtieth injection great improvement was manifest, and in time the entire syndrome arrested, with almost complete restoration of function. *Bernard.* 92

Otitis Media, Chronic. TREATMENT. Perhydrol in 2 to 6 per cent. solution found useful. Patient drops solution into ear and remains on side for 10 minutes; auricle is then dried and cotton inserted in meatus. Where much suppuration, repeat morning and evening. Inspissated pus is dislodged, and cholesteatoma also yields. *Bresgen.* 125

In late stages:—If tube diseased: inflation, with bougie if stenosis exists. Intratympanic injections of menthol oil, iodine solutions, pilocarpine, menthol giving best results. Where fixation of the ossicles: pneumo-massage; injection of fibrolysin sometimes valuable. Operative measures: mobilization of the malleus, synechotomy and tenotomy of the tensor tympani, eventual excision of the malleus and incus. *Yearsley.* 61

Pelvic Inflammation. TREATMENT. Abscess. Simple vaginal incision with drainage; if condition becomes worse, abdominal section, by extraperitoneal method if possible, should be attempted. *Esch.* 62

Hot mud compresses over abdomen recommended in chronic exudative adnexal inflammations and pelvic exudates. The heat is much better borne than in hot water applications, and 10° C. greater heat can be applied. If surface be covered with woolen cloths, heat retained for several hours. Causes hyperæmia and promotes removal of exudate. Contraindicated in acute cases. *Cukor.* 63

Pericarditis. ETIOLOGY. Myocardial degeneration, leading to dilatation, predisposes to pericarditis. Overaction of heart may in-

duce pericardial inflammation. Chronic adhesive pericarditis frequent but often impossible of diagnosis, serious symptoms arising only when myocardium itself is diseased. *Brooks and Lippencott.* 26

Peritonitis. PROGNOSIS. Degree of improvement in circulation caused by intravenous saline infusion is an index of the extent of vasomotor paralysis, the effect persisting in proportion to recuperative power of vessels. If infusion causes no circulatory improvement little benefit can be anticipated from operation. *Lichtenberg.* 126

TREATMENT. Restrict the amount of tamponing and never insert a tampon between loops of intestine. Fowler position always exerts favorable influence. *Dege.* 64

Pleural and other Effusions. TREATMENT. To prevent recurrence, after aspiration, of serous effusions into the pleura, peritoneum, tunica vaginalis, etc., 8 minims to 2 drams (according to size of cavity) of suprarenalin or adrenalin in four times the quantity of saline solution, may be injected into the cavity. *Sajous.* 76

Rheumatic Heart Disease. DIAGNOSIS in children. 1. Subcutaneous nodules generally indicate active cardiac disease. 2. Evening fever without previous cause suggests fresh cardiac inflammation. 3. Joint pains. 4. Sudden appearance or increase in anemia. 5. Persistently frequent pulse. *Carr.* 26

Septicæmia. TREATMENT. In the presence of persistently low blood-pressure, hypothermia, and cyanosis, adrenalin is valuable when very slowly administered intravenously in the proportion of 5 minims of the 1 : 1000 solution to a pint of warm saline solution (105° F.). It enhances pulmonary and tissue respiration and the activity of the immunizing process. *Sajous.* 75

Shock. TREATMENT. Suprarenalin or adrenalin, very slowly administered intravenously; 5 minims of the 1 : 1000 solution to the pint of warm saline solution (105° F.). In urgent cases, 10 drops may be given in 1 dram of saline solution. Artificial respiration hastens effects. *Sajous.* 75

Shock, Post-Operative. PROPHYLAXIS. Pituitary extract (1 cubic centimeter of 20 per cent. solution of posterior lobe) was injected in three cases before complete recovery from the anæsthetic, in conjunction with normal saline by rectum. The pulse, previously barely perceptible, almost at once became large and bounding, slow, and regular, this effect lasting 12 to 16 hours. *Wray.* 93

Stricture of Urethra. TREATMENT. OPERATIVE. Median incision down to urethra, dividing structures of bulb in median line. Divide stricture by longitudinal incision 1½ inches long. Remove excess of scar tissue, or excise whole strictured portion if necessary. Mobilize anterior segment of urethra and join to posterior segment without tension, sutures

being passed from without inward. If roof of canal has been left intact, bring together margins of longitudinal incision transversely, as in pyloroplasty. When $\frac{1}{2}$ of circumference sutured pass No. 28 sound into urethra; complete the sutures around it. Open urethra on the sound at a point as far behind stricture as possible and introduce No. 12 (English) soft rubber catheter. Suture wound in layers, leaving space at lower angle for catheter. Resection applicable to all strictures of bulbomembranous portion not amenable to gradual dilatation and not complicated by infiltration of urine or fistulas. *Cabot.* 126

Suprarenin. Poisonous dose varies with the individual. Danger arises from: 1. Concentration of solution used. Large amount of a weak solution is without danger. 2. Method of introduction. Intravenous injection gives immediate bad effect; locally or subcutaneously it is well borne. Author employs solution of 0.64 gram suprarenin borate in 100 cubic centimeters of 0.5 per cent. novocaine, made up fresh from tablets for each operation; 125 cubic centimeters of such solution used without danger. *Braun.* 127

Syphilis. **TREATMENT.** Mercurool found useful to alternate with the protiodide and in cases where the ordinary preparations of mercury cannot be assimilated; gr. j three or four times daily. Author advocates course of twenty inunctions of the official ung. hydrarg. at the outset of every case of syphilis, before beginning internal administration. Where latter causes serious gastro-intestinal disturbance, and the symptoms of the disease are marked, inunction treatment is to be adopted. Course of three weeks of inunctions in the spring and fall for four or five years recommended. In cases of ulcerating tubercular syphiloderma and gummata best results obtained using potassium iodide (gr. x-xx *t.i.d.*) along with mercurial inunctions twice daily. Mercury is as valuable in tertiary as in secondary syphilis. *Christian.* 45

Tabes Dorsalis. **TREATMENT.** 1. Hygienic. Systematic exercise to train the muscles in co-ordinated movements, preferably taken in the open air, and avoiding fatigue. Ten hours of sleep each night, and a rest after exercising. Massage to keep up muscular tone. Daily warm bath. 2. Dietetic. Easily digestible diet. 3. Electrical. Galvanic or high-frequency current, for stimulating effects on the nervous system and circulation, absorption and elimination being promoted. 4. Medicinal. Sodium iodide, 3ss; compound syrup of sarsaparilla, q. s. ad. f3iv; one teaspoonful in water 2 hours after each meal. Silver nitrate, gr. $\frac{1}{2}$ increased to gr. $\frac{1}{4}$ *t.i.d.*, is often beneficial. *Shoemaker.* 35

Tetany. **TREATMENT.** Infundibular extract (20 per cent.) of Burroughs, Wellcome & Co., recommended; given by intra-muscular injection in doses of 7 drops *t.i.d.*, or oftener. If used subcutaneously it might cause necro-

sis of skin by vaso-constriction. Not poisonous. *Ott and Scott.* 99

Tetany, Gastric. **TREATMENT.** Soluble calcium salts rapidly control symptoms in the tetany of gastrectasis; continued use required. Large saline infusions, as well as parathyroid preparations (nucleoproteid) by the mouth, are but slightly effective. *Kinnicutt.* 123

Tic. **DIAGNOSIS.** True tic, which is of psychic origin, and is a sequel to the un hindered repetition of a once voluntary purposive act, is distinguished from spasm, which is due to irritation of any reflex arc of the bulbospinal tract, as follows: 1. Movement slower. 2. Occurs in volleys. 3. No muscular weakness. 4. Reflexes normal. 5. Painless. 6. Disappears in sleep. 7. Pseudo-coördinate and intentional. 8. Influenced by volition or emotion, and followed by satisfaction. Upon this distinction depends whether treatment shall be surgical, medical or psychotherapeutic. *T. A. Williams.* 5

Toxæmia of Pregnancy. **TREATMENT.** Failure of thyroid gland to hypertrophy during pregnancy probably related to toxæmia. Administration of thyroid beneficial by supplying this deficiency and by diuretic action. Saline extract of fresh human thyroid proteids more rapid and reliable in action than ordinary sheep thyroids. Hypodermic use of thyroid proteids greatly superior to oral use. *Ward, Jr.* 27

Traumatic Neurosis. **DIAGNOSIS.** In response to galvanism the anodic closure contraction equals or surpasses the cathodic closure contraction, as in the reaction of degeneration, but in tracings of muscular contractions the peaks are not rounded as in the reaction of degeneration but sharp and angular as with normal contractions. Increased excitability is observed on both affected and sound sides. *Larat.* 124

Tuberculosis. **TREATMENT.** Mercury succinimide administered hypodermically in 8 cases caused general improvement and appeared to exert a marked controlling influence over the tuberculous process. *Freeman.* 90

Tuberculosis, Pulmonary. **TREATMENT.** Beechwood creosote given both internally and by inhalation affords much relief to symptoms in nearly all cases and in all stages. It is also valuable as a preventive in those predisposed or exposed to the infection. Rest, fresh air, proper food, with or without lime salts. *B. Robinson.* 23

Early tuberculosis treated by antiseptic inhalations with remarkable results. Solution used: Phenol, creosote, spirits of chloroform, of each 8 cubic centimeters (f3ij), tincture of iodine, spirits of ether, of each 4 cubic centimeters (f3j). Of this 6 to 8 drops are poured on the felt or sponge of Yeo's perforated zinc inhaler, and inhaled regularly every hour in the daytime, as well as 2 or 3 times during the night, when patient is awake. Cough is

thereby relieved without sedatives and expectoration facilitated. Where hæmoptysis, add turpentine to the solution. In all cases patient should rest in bed for a week, with windows of bed-room open. In second week he may rise for an hour or two daily, and later walk in the open air every morning. When temperature is normal, use of inhaler may be gradually left off. *Lees.* 93

Tuberculosis, Superficial. TREATMENT. Mercury succinimide (gr. $\frac{1}{2}$ subcutaneously every other day) with mercury protiodide (gr. $\frac{1}{4}$ by mouth *t.i.d.*) gave good results in two obstinate cases of scrofuloderma and one of pharyngeal infiltration. Curetting, cauterization and X-rays ineffective until mercury added. *Hertzberg.* 25

Typhoid Fever. INTESTINAL PERFORATION. Mortality after operation for perforation in children is below 50 per cent.—25 per cent. lower than in adults. *Jopson and Gittings.* 25

RUPTURE OF SPLEEN. This accident occurs most frequently in beginning of the third week, or in convalescence. The enlarged typhoid spleen should be merely touched daily, not handled. **PROPHYLAXIS:** Ice-bag to the spleen. **DIAGNOSIS:** Preliminary pain under left costal arch, sudden increase of pulse-rate by 20-30 beats, evidence of internal hæmorrhage, followed by rapid rise of temperature; liver dulness not obscured; X-rays. **TREATMENT:** Immediate saline infusion and Fowler's position, splenectomy, followed by continuous peritoneal lavage with two glass tubes, below diaphragm and above pubis. *Bryan.* 28

TREATMENT. Alcohol compresses to the abdomen in children advocated in preference to the cold tub-bath treatment, which author regards as favoring hæmorrhage or perforation and as liable to work injury to the heart. Compresses used in 12 severe cases which were rendered milder. Pad of absorbent cotton or 8 thicknesses of gauze is wrung out in 85 per cent. alcohol (90 per cent. for adults), applied to abdomen, covered with cold water gauze compress, and held in place

by flannel band. Water compress renewed every hour, alcohol compress every 2 hours. Acts by local active hyperæmia, while alcohol absorbed stimulates heart. Used also in peritonitis and appendicitis with benefit. *Cheinisse.* 122

Ulcer of Leg, Syphilitic. TREATMENT. Reduce alcohol consumed. Mercury and iodides, preferably organic iodides, well diluted, alternated with courses of strychnine particularly when ulcer again becomes sluggish. General antiseptic application: Boroglyceride 3j, hot water Oss. Locally, black or yellow wash; solution of phenol (1 to 100); tincture of iodine (1 to 4 or 5 of hot water); ammoniated mercury or yellow oxide ointments. Dry treatment: Zinc oxide 3iij, calomel, 3ss, infusorial earth q. s. ad. 3j. X-rays have benefited some cases. Where ulcer resists cure due to tethering of its edge to underlying bone, apply antiseptic fomentations, scrape ulcerated surface with Volkmann's sharp spoon, undercut edges with scalpel, and draw them together, freshening skin-margins. *W. Evans.* 23

Vomiting of Pregnancy. TREATMENT. Adrenalin used with success in a case previously uncontrollable. Ten drops of 1 to 1,000 adrenalin solution given morning and night, at first in enema of 150 grams (5 ounces) water with 20 drops of laudanum, after 3 days in ice-water by the mouth. Nutrient enemas also given. Vomiting ceased on second day, and on third patient could retain a little food. Recurrence of nausea toward end of pregnancy relieved by 10 drops daily for 5 days. *Rebaudi.* 94

Whooping-Cough. TREATMENT. Oxygen used in 30 cases. It is given at each paroxysm. Cyanosis subsides and suffocation is prevented. Child keeps in good condition with appetite throughout. It is best inhaled through a funnel; 10 to 12 liters necessary to control a paroxysm. Where broncho-pneumonia threatens, oxygen should be inhaled every hour; it renders lung aseptic. *Weil.* 64

Book Reviews

A PRACTICAL TREATISE ON DISEASES OF THE SKIN. By John V. Shoemaker, M.D., I.L.D., Professor of Skin and Venereal Diseases, Materia Medica, Therapeutics and Clinical Medicine in the Medico-Chirurgical College and Hospital of Philadelphia, Member of the American Medical Association, American Academy of Medicine, British Medical Association, etc. Fifth Edition, Revised and Enlarged. Octavo of xii + 1012 Pages, with 29 Half-Tone Plates. Philadelphia: F. A. Davis Company, 1909. Cloth, \$6.00, net.

A large amount of new material has been added to this, the fifth edition of Dr. Shoemaker's work. The fact that eight years had elapsed since the appearance of the previous edition made numerous alterations necessary. In most respects the work will be found fully up-to-date. The important effects obtained by means of the X-rays are given in detail, the use of radium duly mentioned and recent advances in photo- and electro-therapy fully described. No allusion is made, however, to the Wassermann test in the diagnosis of syphilis, though the Bordet-Gengou reaction is mentioned and the work of Citron and

Blaschko in this connection reviewed. The bacillus of Ducey, causative of chancroidal lesions, also seems to have been lost sight of. The volume opens with excellent sections on the anatomy and physiology of the skin. These are followed by the usual general description of the subjective and objective symptoms, primary and secondary skin lesions, general diagnosis, pathology, etiology, etc. The general treatment of skin diseases is very fully given. The systematic consideration of the special conditions is then begun. The list of diseases discussed is very complete; it includes the acute exanthemata, burns, frostbites, etc. Polycythæmia with cyanosis (Vaquez's disease) is described in connection with the hyperæmic skin conditions. The various affections are dealt with in an entirely satisfactory manner. The sections on treatment are very complete, especially in the case of the commoner conditions, and enhance markedly the value of the work. An enormous number of therapeutic suggestions and reports of unusual cases have been collected from literature and inserted in the text. While such an arrangement makes it difficult to place proper emphasis on the more important and well-established facts presented, the wealth of material furnished will be found amply to compensate for this disadvantage. The general text closes with a section on lesions of the buccal and respiratory mucous membranes. This is followed by a formulary covering eighty pages, which will no doubt prove an attractive feature, and an index. The illustrations are excellent, though a future increase in their number would not be undesirable. Professor Shoemaker is to be congratulated upon the fifth edition of this very useful work, which should be on the bookshelf of every practitioner and dermatologist.—
L. T. DE M. S.

A HAND-BOOK OF MEDICAL DIAGNOSIS. By J. C. Wilson, A.M., M.D., Professor of the Practice of Medicine and Clinical Medicine in Jefferson Medical College, and Physician to its Hospital; Physician to the Pennsylvania Hospital, etc. Octavo of xx + 1435 Pages, with 408 Text Illustrations and 14 Full-page Plates. Philadelphia and London: J. B. Lippincott Co., 1909. Price, \$7.00.

This splendid volume combines in attractive form the data of physical and laboratory diagnosis with what is virtually a complete text-book on practice minus the sections on treatment. It is divided into four parts, viz: I. Medical diagnosis in general, 50 pages. II. The methods and their immediate results, 340 pages. III. Symptoms and signs, 215 pages. IV. Clinical applications, 810 pages. The aim of the author has been to present in a single work the individual clinical phenomena and methods of diagnosis together with the characteristic groupings of phenomena which constitute definite diseases. In this manner the recognition of the relations existing between several observed clinical facts will be facilitated. The practitioner, moreover, after reviewing the characteristic phenomena of given diseases may without delay, by turning back to the first half of the book, inform himself as to the best clinical methods available for recognizing their presence in the case under consideration. The student, on the other hand, who is reading over the portion on diagnostic methods, symptoms and signs, can readily learn their clinical applications by referring to the section in which diseases are described.

Part I deals with medical topography, and gives general directions for systematic examination of a patient and history-taking. Part II, which is practically a text-book on physical and laboratory diagnosis, begins with a short section on the uses of the thermometer, after which are discussed the methods and significant findings of inspection, palpation, mensuration, etc. The section on inspection is illustrated with numerous photographs of cases from the author's own experience. That on mensuration includes a useful discussion of the sphygmograph and sphygmomanometer and the clinical evidence derived from their use. The pages on cardiac adventitious sounds are worthy of special mention. Next are considered the methods of clinical examination of the stomach and intestines (including gastric contents and fæces), of the upper air-passages and ear, blood (including bacteriological examination, serum tests, opsonic index, leukæmias, etc.), urine, exudates, nervous system and eyes, with a section on examination by the X-rays. This portion of the work contains a number of excellent plates; Plate IX, showing certain types of retinal inflammation, is marred, however, in the reviewer's copy through faulty superposition of the colors.

Part III embodies a very complete and practical discussion of symptoms. These are grouped according to the portion of the body or system of organs to which they refer, and the special modifications of each symptom as it occurs in different affections are given in detail. Part IV gives the etiology, symptoms, diagnosis, and prognosis of all the conditions usually found in works on practice, including diseases of the nervous system. Each disease is systematically considered; there are numerous sub-headings in heavy type, small capitals, and italics, which will increase the value of the book for students and greatly facilitate its use as a work of reference. A new departure has been made in the paragraphs on diagnosis, in which clear distinction is drawn between "direct diagnosis" (or diagnosis by means of the proper symptoms of a given disease), and differential diagnosis. This will no doubt prove a useful feature. The portions of the work on infectious diseases and affections of the cardio-vascular system are especially valuable. Numerous temperature-diagrams have been introduced. Nervous diseases are satisfactorily treated in the final 150

pages of the book. The illustrations showing the characteristic attitudes and deformities present in these affections are worthy of the highest commendation.

In conclusion, we wish to state that this work is a model of completeness and conciseness. These features are indeed essential in a work covering so vast a territory in a single volume. It is very practical throughout, all data of a purely theoretical nature having been omitted. Typographical errors are few and the printing has been carefully done.—
C. E. DE M. S.

BIER'S HYPEREMIC TREATMENT in Surgery, Medicine and all the Specialties: A Manual of Its Practical Application. By Willy Meyer, M.D., Professor of Surgery at the New York Post-Graduate Medical School and Hospital, and Professor Dr. Victor Schmieden, Assistant to Professor Bier at Berlin University, Germany. Second Revised Edition. Octavo of 280 pages, illustrated. Philadelphia and London: W. B. Saunders Company, 1909. Cloth, \$3.00 net.

The fact that a second edition of this book appears in the year following the publication of the first is clearly significant of the general interest Bier's methods have aroused in the American profession. The work is in every way practical and greatly facilitates the trial of these methods by the practitioner, who will find in its pages no dearth of conditions in which the principle of hyperæmia may be considered applicable. In the present edition additional reference has been made to the use of hyperæmia in delayed union of fractures, empyema, rabies, snake-bites, vomiting after ether, anæsthesia, and in pregnancy, tuberculous infiltration of soft tissues, club-foot, burns, and locomotor ataxia. A number of case histories have also been introduced, and an extensive bibliography appended, which will be very acceptable to those who wish to look up the literature of the subject. The work is eminently calculated, by its clear text and excellent illustrations, to furnish an exact idea of the procedures to be employed, and will strongly tempt the reader to carry out this line of treatment in conjunction with the time-honored methods or as an actual substitute for them.—
L. T. DE M. S.

PARENTHOOD AND RACE CULTURE. By Caleb Williams Saleeby, M.D., Fellow of Obstetrical Society of Edinburgh, Member of Council of Eugenics Education Society, etc. New York: Moffat, Yard and Co., 1910. Price, \$2.50 net.

Dr. Saleeby has already made three valuable contributions to semi-medical literature in his books on "Worry," "Evolution, the Master-Key," and "Health, Strength and Happiness." All these are to be highly commended to the attention of the Physician, not alone for what they may furnish to him, but as being valuable books to place in the hands of patients who desire correct information and proper guidance in these lines. The work before us presents an outline of a most important subject, namely, the means, actual and possible, by which the quality of the race can be improved. Eugenics is rarely touched upon in medical literature; is indeed pre-eminently a post-graduate or scholastic study, which, however, is in many ways related to the realm of preventive medicine, and which must secure increasing attention from leaders in medical thought as time goes on.

The subject of eugenics has been divided by Galton and Saleeby, respectively, into "positive" and "negative" eugenics. "The one would seek to encourage the parenthood of the most desirable, the other, to discourage the parenthood of the least desirable." While the first involves an exceedingly broad ethnologic study, from which, in time, there may be evolved practical recommendations which may finally be reduced to legal enactments, or at least to recognized customs of society, the latter, negative eugenics, is fully capable of being dealt with by administrative measures now established. The tendency among medical thinkers is more and more to recommend measures which shall make impossible the procreation of the unfit. They are, however, perpetually thwarted by deeply ingrained prejudices of society. The only way to secure satisfactory results is to educate society up to recognizing the criminality of permitting the right of procreation to degenerates.

This charming book, so lucid, convincing and withal temperate, will go far toward achieving this fundamental measure. In our recent review of "The Expansion of Races," by Major Woodruff of the Army, we called attention to this same subject.

COMMON DISORDERS AND DISEASES OF CHILDHOOD. By G. F. Still, M.D., F.R.C.P. Pp. 731. New York: Oxford University Press, 1909. Price, \$5.50.

This volume by Dr. Still is a peculiarly valuable and charming presentation of the subject of disease in childhood. It is, by the way, dedicated to that master of the subject, his friend and former teacher, James Frederick Goodheart, who merits all the good things that may be said of him. The book is in lecture-form, the phrasing personal and colloquial; this gives an alert and convincing quality to the subjects presented, fixing the attention upon the important points far better than a more systematic text-book. His theme is mainly the everyday and the commonplace disorders "which bulk most largely in the out-patient and in-patient clinics of a children's hospital, and in the routine of private practice." We would particularly commend the opening chapter, which is most suggestive; whereas in many books this part is often defective. There is an excellent chapter on "The Use and Abuse

of Condensed Milk and Baby Foods;" another on "The Common Faults and Fallacies in Infant Feeding;" another, Chapter XIV, on "Medical Aspect of Dental Caries in Childhood," a subject of the utmost importance, but one far too rarely emphasized. Certain subjects are omitted, or touched on but lightly but these are such as will be found in any systematic work on internal medicine and are not peculiar to disease as exhibited in childhood. The book will be especially welcomed by the advanced student, the busy practitioner, who will find his residue of knowledge notably clarified and systematized by the alert suggestiveness of the style. For the undergraduate it is well adapted and amply sufficient to cover the ground.—J. M. T.

PREVENTABLE DISEASES. By Woods Hutchinson, A.M., M.D., Author of "Studies in Human and Comparative Pathology," etc. Clinical Professor of Medicine, N. Y. Polyclinic, etc., etc. Boston and New York: Houghton Mifflin Co. Riverside Press, Cambridge, 1909. Price, \$1.50, net.

Dr. Woods Hutchinson is the prototype and epitome of the optimist in nature's methods and possibilities. He is likewise well learned in the natural history and phenomena of disease, especially in human and comparative pathology; hence he speaks with authority from the groundwork of function and structure, whether normal or morbid. Most of these chapters have appeared as essays in the popular magazines, but they constitute a fairly consistent series of suggestive points grouped under each title. We have heard many favorable comments from physicians and other educated people, upon the subject-matter of the essays as they came out. It is recognized that a competent authority, in speaking to the mass of mankind through the medium of current literature upon subjects vital to the best physical welfare of the race is capable of accomplishing much illumination and ultimate betterment. Quite aside from the value of the material, Dr. Hutchinson's style is so delightfully suggestive and humorous, so filled with pungent comment and well-chosen illustration, that it seizes and holds the attention so that the important thought can be thoroughly instilled.—J. M. T.

DANIEL DRAKE AND HIS FOLLOWERS. Historical and Biographical Sketches. By Otto Juetner, A.M., M.D., Author of "Modern Physio-therapy," Editor of "Songs of the University of Cincinnati," Fellow of the American Academy of Medicine, the American Association for the Advancement of Science, the Ohio Historical Society, the Association of the American Editors, the American Electro-therapeutic Association, the American Physio-therapeutic Association, the Royal Society of Medicine (England), the Royal Microscopical Society, the Royal Anthropological Institute of Great Britain and Ireland, the London Roentgen Society, the Society of Arts (London), the German Roentgen Society, the Société de Radiologie et Electrologie, Paris, etc., etc. Cincinnati: Harvey Publishing Company.

The lives of great men are often an inspiration to posterity. The early history of medicine in the United States stands out in bold relief with men who are looked upon for their sterling character, their earnestness of purpose, and their marked ability to overcome apparent unsurmountable obstacles in the face of adverse circumstances. Such a character was Daniel Drake, whose early training was similar to many more who have been raised in the backwoods or on the frontier, and who have risen by their own efforts to positions of prominence and responsibility.

The author deals with the life of Drake in a most picturesque fashion, and relates how his early education was obtained mostly by his close contact with nature, which experience in later years was instrumental in making him an authority on medical botany. Having completed his student days with the study of medicine under a preceptor, it was not long before Drake became a prominent factor in the early development of Cincinnati, being closely associated with many of the medical institutions which sprung up from time to time. The controversies in which he often found himself involved were usually fought to the bitter end, but in spite of it all, his ideals were high and his efforts were ever in the direction of the public good. In the early medical annals of Cincinnati Drake will be found as one of the foremost figures. His prominence in the West is considered the equal of that of Rush in the East.

Associated with Drake in various capacities were many men, some of whom have already been lost in the depths of oblivion, while others have been more fortunate and are still looked upon as giants in the profession during their time.

While the prominent feature of this volume is the "Life of Daniel Drake and His Followers," it might also be looked upon as a medical history of Cincinnati, for it includes the establishment and development of the various medical schools, hospitals, medical organizations, the consideration of the different medical journals, and also gives a list of the most prominent writers of the time. The author is to be congratulated upon collecting so many facts of historical interest and value and presenting them to the profession in such an interesting and practical manner.—R. B. S.

[End of Editorial Department.]

The General Field

The Ruling Passion in the Medical Mind.

The doctor's personality has been the subject of analysis by some of the ablest novelists of the past as well as the present. It is interesting to contrast the average conception of the physician as set forth by these writers with their ideas of those engaged in other professions and occupations.

The tendency of the novelist is almost invariably to invest the doctor with a halo. Exceptions to this general rule are nearly always in the form of satirical allusions to the quacks. Probably no member of the guild of fiction has more happily expressed the popular idea of the physician than Margaret Deland in her *Doctor Lavender* books. Contrasted with the delightful personality of the good old clergyman, is the practical, clear-headed vision of Dr. King, who sees in their proper proportion all the dramatic incidents which are so graphically set forth by the writer. It is Dr. King who forms the correct analysis of the chief feminine figure in the romance. He appreciates her good points and her bad points at their true significance, and later on solves the intricate problem in the most practical way.

The ruling passion of the composite type of physician places him in a situation apart from the rest of the world. It is seldom that the physician develops the overwhelming desire for wealth which seems to parade itself unpleasantly in the lives of others. Petty economy is foreign to the physician's nature. No class of people are probably so free from an uncharitable view of other people's motives. The physician who sends his

goodly sized bill for professional services to the man of wealth, may have taken an even greater interest in a charity case. The lawyer sees the seamy side of life and becomes a cynic, but the doctor sees even less attractive phases of life and never loses his sense of appreciation of that which is commendable.

The doctor is to a large extent the popular idol, probably because he is imposed upon by all classes, and yet the warmest admirers of the family physician all agree that he is gravely inconsistent. To no one as much as to the doctor does that old maxim apply, "don't do as I do,—do as I tell you." Those who know the family doctor the best are most likely to disregard his comments on diet and hygiene. Usually the personal dietary vagaries of the medical man are regarded with affectionate tolerance, but there are exceptions. A physician whose fighting weight runs about 280 pounds once lost a very interesting and profitable case by developing the habit of calling on his country patient at ten or eleven o'clock in the evening and demanding that an elaborate supper be prepared for him on each occasion. This was exhibiting the "ruling passion."

Altogether, the ruling passion of the physician regarded as a composite can be very simply stated,—it is to bring the patient entrusted to his care through to health and safety, irrespective of the financial reward accruing to him "for professional service."

An Unfortunate Ambiguity.

There are times when the ordinary individual without legal training stands aghast at the evidence of profound

knowledge of the law set forth by some high tribunal, and there are other times when his wonder is aroused at the apparent inability of the trained legal mind to express itself in comprehensible language.

It will be remembered that by special resolution Congress authorized the submission to the various States of an amendment to the constitution that would permit the levying of an income tax in time of peace. The proposed amendment is as follows:—

Article 16. Congress shall have the power to lay and collect taxes on incomes from whatever source derived, without apportionment among the several States and without regard to any census or enumeration.

It might be expected that in a matter of such importance very considerable care was exercised in the phraseology of this amendment. Nevertheless, it seems to be capable of two very different interpretations as shown by the recent message of Governor Hughes, of New York, in which he expresses his unqualified opposition to the ratification of this amendment by the New York legislature, basing his objections chiefly upon the interpretation of this amendment that it permitted assessment of tax upon incomes "from whatever source derived," which in his understanding would include the incomes from U. S. bonds and other securities not heretofore subject to taxation.

And now comes Senator Elihu Root with a dissenting opinion. He advocates the ratification of this amendment by the New York legislature and gives a very different meaning to the phrase "from whatever source derived." Mr. Root sees nothing in that phrase that would justify the former conclusion, saying that it should be taken in connection

with the explanation which immediately follows in order to arrive at its full meaning.

Altogether, this is a very interesting instance of that ambiguity which seems to creep into the ablest legal documents. Samuel J. Tilden was considered to be the ablest authority on testamentary documents of his time, yet his own will was broken with apparent ease and his wishes expressed therein defeated.

The Advance in the Price of Food— What Can be Done About It?

The widely prevailing discussion, as to the reasons for the increased cost of living, must naturally make a marked impression upon the well-informed foreign visitor by chance on these shores at the present time.

It seems to have all at once dawned upon the average newspaper writer, or contributor to other periodicals, that there is something radically wrong about the tendency of food values to constantly advance. The average urban resident, logically expects that kind Providence will feed him at a certain nominal cost,—that same cost is to be passed back to the farmers, who should be appropriately grateful. It has accordingly caused a very severe shock to find out, recently, that the real reason why the commission man insists upon charging so much for potatoes and the butcher so much for meats, is the necessity on his part of paying a very high price for these products to the farmers.

When the responsibility for high prices is brought up to the farmer himself, he is able to give a very convincing reason for it. He explains that as beef, mutton, and pork are produced by feeding grain in liberal quantities and the price of grain has advanced 50 to 75 per cent. in a few years, it is necessary for him to get

more for his meat when he sells it. He furthermore explains that instead of taking what is offered to him in meekness and gratitude, he is now more in a position to accept or refuse, as the case may be, and that the meat packers do not dictate to him in these days as they did a few years ago.

The explanation for the advance in the price of vegetable products is somewhat similar. High cost of living makes farm labor more expensive and for this reason also the farmer must get more money for everything he sells. A great factor, however, in the situation is that farms are not tilled in a good proportion of the United States as they were some years ago, before the exodus of able-bodied men from the country to the city had become so extensive.

Improved machinery somewhat takes the place of farm labor but not altogether. The farmer becomes so disgusted with the difficulties of running his farm on high pressure without responsible help, that he either reduces the scope of his operations, or if he has become somewhat independent financially, leases the farm to some more or less improvident tenant, while he takes up his abode in the neighboring village.

The result is the steady decline in the productiveness of the farms and the development of a sentiment, that only the mediocre kind of a man could be expected to have anything to do with the farm.

It is this sentiment which is even more to be regretted than the high price of food and products. The store clerk in the city who gets \$6.00 a week and pays out \$4.00 of it for his board, but who devotes his two weeks' vacation pay to a trip to the country, is easily convinced in his own mind that he is a vastly superior person as compared with the farmer

in overalls who jogs along the country road with a \$500.00 farm team, and who may own free from encumbrance a prosperous farm.

The most salutary remedy for the present evils, including high price of foods, is to readjust this sentiment. Although the amount of discussion as to present conditions has reached a total appalling to contemplate, few if any who have written on this great topic, have touched upon this particular attitude of a large proportion of the country's population.

Organized labor has no use for an agricultural existence at present. The unions have attempted to increase the purchasing value of the weekly wage by combination among themselves but as a rule, however, have discouraged the aspirations of the exceptionally ambitious man. Their general conception is a utopia where all kinds and conditions of employees shall get equal wages, a proposition utterly impractical from the farm standpoint. The industrial conditions of this age of competition with foreign nations also renders that idea impractical.

The best possible form of philanthropy would be to utilize some of the millions, now devoted to higher education, for the establishment of farm schools, where bright boys from the slums could be educated in the science of agriculture. If this could be accomplished in the right way, it would vastly help to solve the problem of farm labor, help to change the attitude toward the farms and open up to the dwellers in the tenements hopeful opportunities for great numbers of bright boys, who under present conditions seem destined to occupy positions of drudgery in the cities, with the incidental discouragement and degeneration which always goes with a losing fight.

Dr. Fischer's Interesting Case.

In this issue will be found a clinical report by Dr. Louis Fischer, the well known pediatrician, which describes with great detail his successful treatment of meningitis in an infant of two months.

Such victories cannot fail to inspire the physician with renewed hope and enthusiasm.

It is evident that serumtherapy in the hands of those competent to apply it can accomplish apparent miracles. The burden of responsibility, however, placed upon the physician in the administration of serums is very much increased, hence, the full details of the case as set forth in Dr. Fischer's report will be much appreciated.

The Doctor's Opinion will Carry Weight.

It is gratifying to know that there seems to be an awakening among people of influence as to the horrors of the so-called "Third Degree" as applied in police circles where the prisoner seems to be friendless and timid. There may be instances where firmness and a rigid examination is allowable but every suspected criminal should be given a fair chance to answer the questions intelligently and to be protected by counsel under such circumstances.

There is altogether too much talk about one kind of justice for the rich and another for the poor, and nothing is more apt to increase that unrest than the spectacle of a well-to-do criminal ably supported by the most competent counsel that money will procure and being treated by police officials with the utmost courtesy, while at the same time the friendless suspected criminal is treated in a manner that would make Siberia seem a sanitarium by comparison.

Senator Heyburn purposes investigating this abuse and it is to be hoped that

something tangible may result from his efforts.

Nervous Children—Mothers Often Responsible.

Dr. William N. Bullard, in a recent lecture at the Harvard Medical School, says that nervousness in children is often the result of nervousness in the mother, and that nervousness in the mother is always a defect and often a sin. He also says:—

"Such a mother is an injury to her children as long as they are under her care. Every child starts in the world with its nervous system more or less impressionable. If the persons in charge are nervous and irritable, the child will be badly influenced. How often have I said, when such children are brought to me, 'Oh, if I could only treat the mother.' In the majority of such cases, if the parents could be treated the children would get well.

"Nervousness in children may occur alone or in combination with other disturbances, and it may or may not be a serious matter. It is often temporary. In some cases the nervousness is apparently inherited or temperamental. But the surroundings are a strong factor in the production of this condition, and the proportion due to inheritance and that due to surroundings is impossible to determine.

"The child with a so-called nervous temperament should be trained from its earliest year. All physical sources of irritation should be removed. It should be sheltered from all forms of excitement, whether pleasurable or otherwise, in infancy, and trained in self-control later. Discipline should be strictly maintained, but no undue severity should be used.

"Nervous children must not overeat.

Children who overeat are apt thereby to become more nervous through the resulting stomach irritation. Therefore, the diet should be a mixed diet of ordinary food and should simply be limited as regards quantity. They should go to bed early and sleep fairly late, and they should have as much fresh air as possible all the time. They should be out of doors as much as possible and should have their windows open at night. In this climate there is no risk in that."

The Lawyer Must be Provided For.

A resident of New Jersey, poor in this world's goods, but of a diplomatic and logical mind, made an amicable arrangement with his wife by which he was to pay her \$4 a week for a quit claim on his further companionship and with the definite understanding that he was to take another wife. This arrangement, after being happily consummated to the entire satisfaction of all the parties concerned, was rudely broken up by a meddling lawyer who insisted that the arrangement was not legal. Not having the requisite funds with which to carry out the formula prescribed by the legal light in question, there was of course nothing else for the man to do but to return to wife No. 1, until by hard work and great self-denial the necessary funds could be accumulated by which to accomplish the same result in a manner satisfactory to the legal profession.

The wealthy seem to have all the advantage in matrimonial matters.

Dr. Wiley's Criticism of the Oyster Fattening Process.

With the prospect of radical legislation designed to regulate the "fattening" process of oysters in fresh water, there seems to be reason to expect that oysters

will follow other food commodities in the rise to higher prices.

Dr. Harvey Wiley, Chief of the Bureau of Chemistry, has very aggressively condemned the present method of preparing oysters for the market, declaring that many of the waters devoted to that purpose are impure and that the oysters thus fattened are a menace to public health.

The present tendency to demand more hygienic conditions for food products, as for instance the tuberculin test in cattle, is an element in the price of food which should not be lost sight of.

The Retention of Whiskey and Brandy in the U. S. P.

Mrs. Martha M. Allen, Superintendent of Medical Temperance for the W. C. T. U., has been collecting opinions of eminent medical teachers as to the prescribing of alcoholic liquors as a medicine. She produces a large amount of evidence that alcohol as a therapeutic agent is pretty generally disregarded by a large element of the medical profession. Mrs. Allen has also investigated the hospitals and finds that the use of liquors in many leading institutions has fallen off to a very marked extent.

Having gathered together these opinions she is appealing to the medical authorities that be to eliminate all official recognition of alcoholic liquors from the next issue of the Pharmacopœia.

The activity of the W. C. T. U. is never-failing. It will be interesting to know just how the various professors of materia medica will view this aggressive but not unusual action.

The W. C. T. U. seems to have a way of getting what it wants as shown by the abolition of the canteen in the army posts, a question which has been a favorite subject of essays by editorial writers in the leading newspapers of the country for several years.

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Original Articles

MODERN VIEWS ON IRREGULAR HEARTBEAT.*

By HENRY SEWALL, Ph.D., M.D.,
DENVER, COLO.

PHYSICIANS were accustomed to study and make deductions from the physical signs of the pulse long before the discovery of the circulation of the blood. No one can doubt that useful clinical information was thus obtained, but it is self-evident that neither the full understanding nor the utilization of the facts was possible until after Harvey's demonstration of the physiology of the heart. It is hardly going too far to say that the medical profession to-day is, generally, as regards the causation of cardiac arrhythmia, in much the same condition as were their pre-Harveyite ancestors respecting the cause of the pulse-beat. In the past few years, however, a number of laboratory and clinical investigators have opened for us a rich mine of information from which the ore is all ready to be smelted and coined for general circulation.

It is not my intention to dwell upon the history of this subject, but I cannot refrain from mentioning in advance one name, James Mackenzie, as that of a physician who, unaided and in a provincial community, studied his clinical facts from the point of view of physiology and pathology and devised instruments by which he was able to demonstrate many mechanical truths of the circulation and investigate unsettled hypotheses. Mackenzie's book¹ on "Diseases of the Heart," published in 1908, is by all odds the most searching study of the clinical pathology of the heart known to me. As an easily available discussion of the subject in hand I would refer you to a characteristically admirable paper by Meltzer^{1a}, a copy of which was only received by me while this article was in preparation.

In order to understand the pathologic heartbeat it is necessary to study it in the light of the causes and conditions of the normal contraction. The

* Read by invitation before the Denver County Medical Society and the El Paso County Medical Society, February 8 and 9, 1910.

heart begins its existence in the embryo as a simple pulsatile tube completely devoid of nervous tissue. In its development the contractile tube becomes bent on itself, various outgrowths spring from it, and all these parts are fused together in the highly specialized organ we know in the mammal. In the lower vertebrates the fusion of the parts of the heart tube is not carried to the same extent, and we can distinguish anatomically various areas of functional differentiation such as, proceeding from the *venæ cavæ*, the *sinus venosus*, the auricle, the ventricle and the *bulbus aortæ*. In the mammalian heart it is probable that the sinus is represented by tissue in the terminations of the great veins together with a patch of the right auricle between the mouths of the *venæ cavæ*.

Of late years the explanation of the clinical disorders of the heart has harked back to a consideration of the fundamental physiologic properties of the cardiac tissue. These functions are: 1, automatism; 2, irritability; 3, rhythmicity; 4, conductivity; 5, contractility. Some of these properties we have been used to consider as limited to nervous tissue, and the automaticity and rhythmicity of the heartbeat were formerly generally attributed to excitations arising in the nerve ganglia contained in the organ. That is, the heartbeat was supposed to be *neurogenic* in origin. But in 1883 Gaskell² published his famous demonstration of the independent automaticity and rhythmicity of nerve-free strips of muscle isolated from the ventricle of the tortoise. These experiments gave the first scientific foundation for the *myogenic* theory of the heartbeat, according to which all the fundamental properties of the organ reside in the muscular tissue itself. Essentially this theory to-day probably has the overwhelming support both of laboratory workers and clinical observers.

To one possessed of a fair degree of imagination, the unfolding of our knowledge of the structure and functions of the heart must be a thrilling romance. The adherents of the muscular origin of the heartbeat met with a fatal break in their chain of reasoning in trying to explain how the contractile wave from the auricles was able to pass over the tendinous junction between the auricles and ventricles of the mammalian heart. In the heart of the tortoise a direct muscular connection exists between auricles and ventricle, but anatomists had failed to find such a bond of union in the mammalian heart. Ten years after the work of Gaskell, Stanley Kent,³ of Oxford University, proved the existence and the conducting function of a band of modified muscular tissue connecting the auricles and ventricles, and the following year a German, W. His, Jr.,⁴ gave independently an accurate and elaborate description of the connecting band and of its function. This band of muscular tissue bridging the auriculo-ventricular groove has since been known as the bundle of His, or more correctly the auriculoventricular bundle.

The band of tissue described by His in the human heart is only 18 millimeters long by 2.5 millimeters wide by 1.5 millimeters thick, and pierces the interauricular septum from the right to the left side. A Japanese, Tawara,⁵ and later Keith and Flack,⁶ have shown that this bundle ramifies, branching in its distribution, throughout the heart, though the latter authors consider only the ventricular destination of the fibers. The casual observer probably

never perceives the bundle of His and even the serious investigator may have difficulty in demonstrating it by dissection. It is interesting to read Keith's own account of his experience in this direction.

Keith writes:—"The guide to it (the auriculoventricular bundle) is the septal cusp of the tricuspid, the base of which is attached just below the septum of the auricles. At the anterior end of the attachment of the septal cusp is the *pars membranacea septi*, so that there is no need for a search over a wide area. Having studied rather minutely the arrangement of the heart musculature for some years and searched for a definite muscular path between auricles and ventricles, I was surprised that I had missed such an extensive muscular connection as is described by Retzel, and accordingly, with the minute directions of Hering to guide me, I renewed my search in the human heart, for it is inconceivable that the cardiac impulse should cross the auriculoventricular junction by a pathway in man which is different from that in other mammals. With the naked eye I completely failed to find the bundle of His in fresh or in formalin-hardened hearts." * * * "From Aschoff's account (of Tawara's work) I learned that the bundle of His arose from the musculature of the coronary sinus and passed forwards in the interauricular septum to the central fibrous body of the heart on which it formed a plexus of fibers. From this plexus a distinct bundle breaks through the fibrous body into the interventricular septum, and after a very short course divides, to be distributed as a subendocardial muscular plexus on the right and left sides of the interventricular septum. The auricular part of the bundle is made up of very fine, richly nucleated fibers, and the fibers of the ventricular part of the bundle belong to the Purkinje type of fibers. With this account to guide me I renewed my search with success."

For the benefit of those who desire to demonstrate for themselves the bundle of His, Keith and Flack state that the structure which is so difficult to recognize in the human heart is almost diagrammatic in its prominence in the heart of the calf.

It is the belief of Mackenzie, which seems supported by accumulated facts of physiology, pathology and anatomy, that in this third heart tissue, represented by the auriculoventricular bundle and its ramifications, are seated those functions of automaticity and rhythmicity which especially characterize cardiac tissue. The fibers of this bundle histologically resemble muscle rather than nerve. They certainly conduct impulses and are probably contractile as well. It is tempting to adopt the assumption of Mackenzie that they represent the comparatively undifferentiated remains of the primitive cardiac tube, and retain to the full the generalized powers of embryonic tissue which have been more or less lost to the completely specialized nerve and muscle as they have become differentiated.

In the explanation of the normal heartbeat, then, we must conceive the primitive cardiac tube retained in the heart substance, now represented as a bundle of conducting fibers, now as a plexus of irritable tendrils. Like the primitive tube, this complex of fibers is more irritable at one end than the other, so that the functional discharge normally arises at one extremity and passes thence throughout the system. All parts of the system have the same

fundamental properties, only differing in degree. An impulse to contraction can probably originate in any part of the system but the protoplasm seems especially irritable where the fibers form plexuses or nodes, of which the most irritable is seated in the remains of the sinus near the root of the superior vena cava. There is at least one other node,—in the auricular septum near the ventricular groove. It was proved by Kent that the fibers in question can conduct a contractile impulse equally well in either direction, and thus theoretically, as we shall find practically, an impulse generated in the middle of the Purkinje system causes a contraction to pass both towards the cavæ and the apex from that point.

As might be expected, so complex a network of irritable tissue as is represented by Purkinje's fibers and their extensions must be subject to various pathological accidents. One of the most obvious accidents is that due to narrowing or compression of a conducting path by the pressure of a tumor, as a gumma, or by the constriction from fibrous tissue developed as a result of some disease, such as rheumatism. The constriction of a conducting band may be either partial or complete. In the former case the physiological result is a delay in the transmission of the impulse. This effect was first pointed out by Gaskell in his experiments on the contraction of strips of muscular tissue cut from the heart of the tortoise. When such a strip was transected, so as to leave only a narrow connecting bridge of tissue, the contraction wave started at one end of the strip was visibly delayed in passing across the connecting bridge. Now, the conducting embryonic tissue of the heart is all gathered in a narrow, compact sheaf of fibers, the auriculoventricular bundle, in its passage from auricles to ventricles. It is obvious that any compression applied here should theoretically more or less dissociate the activity of the auricles and ventricles. The facts of physiology and pathology completely substantiate this suspicion. Erlanger,⁷ at Johns Hopkins University, acting on a suggestion of Osler who was studying an illustrative case, devised a clamp which he was able to apply to the septum of the living dog's heart at the level of the auriculoventricular groove. The clamp involved, of course, the auriculoventricular bundle. Light degrees of pressure resulted in no change of auricular rhythm, but the minute interval elapsing between the end of auricular and the beginning of ventricular systole was prolonged. That is, there was a delay in the transmission of the contractile impulse from auricle to ventricles. When the clamp was slightly tightened certain ventricular contractions regularly fell out. Thus, a given auricular impulse would fail to cross the bridge to the ventricles, but the ineffective stimulus evidently altered the irritability of the conducting tissue, for the next auricular contraction was conducted, so that the cardiac rhythm was composed of two auricular to one ventricular beat. With a greater degree of compression, two ventricular beats in each cycle became ineffective and Erlanger got a 3 to 1 rhythm of auricle to ventricle; with greater compression still he obtained a 4 to 1 rhythm, and when the conducting bundle was completely crushed the auricles and ventricles beat independently of each other, the ventricles at a much slower rhythm. Erlanger⁸ has found in recent experiments that permanent destruction of the bundle of His produces a permanent

block of the auricular impulse; that is, the destroyed bundle does not regenerate. These are the identical circulatory events which characterize that curious syndrome known as Stokes-Adams disease. In practically all the cases of this disorder which have been submitted to careful post-mortem examination there have been found lesions involving the integrity of the auriculoventricular bundle of His. Thus has the co-operation of clinical observer and physiological experimenter succeeded in unravelling one of the most mysterious of pathologic phenomena.

While few, if any of us, have ever seen an example of complete blockage of the auriculoventricular impulse as manifested in the final stage of Stokes-Adams disease, the partial blocking of the impulse, leading to the occasional dropping of a ventricular beat, and even more frequently the delay in the transmission of the impulse across the connecting bridge between auricle and ventricle, are common occurrences.

Clinically our study of the heart has been almost wholly confined to the ventricles and, indeed, has extended little beyond the action of the left ventricle. Vastly more important and timely information may usually be obtained from a study of the action of the auricles, of which the right chamber discloses its activity through the jugular pulse. When a person lies supine there is usually visible at the root of the neck over the inner ends of the clavicles a pulsation corresponding in rhythm with the heartbeat. This vibratory movement of the skin is the transmitted pulsation from the underlying internal jugular vein and carotid artery. The venous pulse causes a relatively slow, often dicrotic, swelling and a quick, sometimes dicrotic, decline, and the arterial pulse a quick swelling, and a slow decline. The venous pulsations can easily be brought to rest on either side by gentle pressure with the finger tips down behind the inner end of the clavicle. It is worthy of mention, in passing, that valuable information as to the state of the heart may be obtained by clinical study of the jugular pulse. According to Gibson the normal or "negative" venous pulse may be distinguished from the "positive" pathological pulse indicating tricuspid insufficiency, by the fact that the first rises in a double wave and the second in a single wave. This rule has only a general application.

Much useful information as to the action of the auricle and the state of intracardiac turgidity may be gained by simple inspection of the neck. But for purposes of accuracy the movements must be graphically registered, and timed by a chronograph marking intervals of $\frac{1}{6}$ second. Such a graphic record may be made by applying over the pulsating area of the neck the mouth of a shallow funnel, which is connected by rubber tubing to a tambour with lever adapted to write upon a moving smoked surface. The air within the funnel is condensed and rarefied by every up and down movement of the skin and the waves so produced are transmitted to the registering tambour. The normal venous or jugular pulse is composed of three different waves named by Mackenzie the *a*, *c*, and *v* waves. The *a* wave is due to contraction of the right auricle, and its beginning marks exactly the beginning of the auricular contraction. The *c* wave was supposed by Mackenzie to be due to the transmission of the pulsation from the carotid artery. At all events the beginning of the *c* wave about marks

the beginning of the outflow from the left ventricle. The time *a* to *c* therefore includes the systole of the auricles, the time taken by the auricular impulse in traversing the bundle of His and, in addition, the period of rising tension in the ventricle during which this organ is summoning power to overcome the resistance in the aorta and open the semilunar valves. This *a-c* interval, as it is called, is normally $\frac{1}{5}$ of a second in duration, but in the debilitated heart it may be greatly prolonged, leading to a retardation of the arterial pulse; or, again, the conductivity of the bundle may be so reduced that not sufficient stimulating energy reaches the ventricle to excite it, and a beat drops out, the pulse becoming intermittent. In such a case as this the contraction of the auricle is manifested by a pulsatile movement in the neck while the ventricle remains at rest. The facts seem to show that lowered conductivity of the bundle of His may be due either to lowered irritability from nutritive defects, or to actual mechanical impediment in the conducting path, or to both. A study of graphic tracings representing variations of the *a-c* interval under abnormal conditions is likely to show a gradual prolongation of the interval up to a certain length. Then a ventricular beat falls out and a long ventricular diastole ensues. The next following *a-c* interval is much shorter, but the rhythmic lengthening begins as before. That is to say, the auriculoventricular bundle is subject to fatigue; it transmits an impulse with more and more difficulty and finally not at all; but after the unusual rest given by ventricular intermission it is refreshed and the *a-c* interval becomes shorter. It is obviously difficult to determine in any

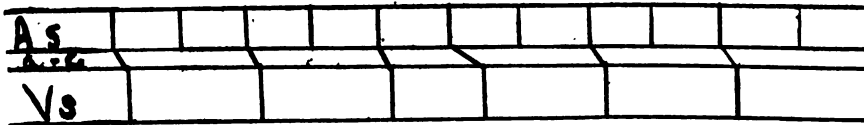


Fig. 1.—Illustrating delayed conduction in the auriculoventricular bundle. The vertical lines in the horizontal space marked *As* indicate auricular systole; the lines in *Vs* mark the corresponding ventricular systoles and the oblique lines connecting them record the *a-c* intervals. Note that every alternate auricular stimulus fails to excite the ventricle with exception of the sixth, which is merely slowed in its passage. (*Mackenzie.*)

given case whether a delay in the pulse beat is due to depression of conduction or insensitiveness of the ventricle towards stimulation. For practical purposes, however, the conditions are the same. This variable conductivity of the auriculoventricular bundle is of extraordinary practical importance in cardiac therapeutics. Digitalis, *e.g.*, tends to distinctly lower the conductivity of the bundle and may easily by toxic action cause ventricular intermission, as was definitely proved by Mackenzie in a case. When, during exhibition of digitalis, the pulse becomes abnormally infrequent, especially if ventricular beats are occasionally dropped, a toxic action of the drug may be suspected. I have personally painful recollections of a case or two in which there was instantaneous alternation of a very slow and a very rapid ventricular rhythm, which now appears to me to have been due to excessive dosing with digitalis.

(To be concluded in the May issue.)

**SUBSTERNAL RESPIRATORY SQUEAL: A HITHERTO UNDESCRIBED
ADVENTITIOUS CHEST SOUND HEARD OVER THE
REGION OF THE HEART.***

By ROLAND G. CURTIN, M.D.,
PHILADELPHIA, PA.

IN examining the hearts of many thousands of patients, I have found over the region of the heart in nine of these cases an adventitious sound that I have not seen recorded in any of the works on cardiac disorders, and, wishing to give my observations to the profession, I shall take this opportunity to report them. Of the last six of these nine cases I made careful records. Four of the patients were females, and two were males. The greatest importance of these observations seems to be that a knowledge of the sound, its location, and its character, may explain some of the sounds that frequently puzzle examiners, for it is very evanescent, coming and going without apparent cause. It is not accompanied by any apparent associated symptoms or conditions. It may be intermittent or remittent, changing only with respiration, but not affected by the action of the heart. The fact that it is sometimes remittent shows that it occurs at a point at which the blood is constantly flowing. The fact that it is influenced by respiration proves that it is connected with the respiratory flow of blood. I have never but once heard this piping squeal in a case with other evidence of organic valvular heart-disease and once with angina pectoris. Each time it has been discovered accidentally in patients being routinely examined, who had no special cardiac symptoms, except one case that had angina pectoris. It is apparently present without rhyme or reason, so far as known cases are concerned.

CASE I.—E. McD., aged 35, a dressmaker, had had profuse menstruation for two years, but the last time it was scanty and painful. She went to three prominent gynecologists, who diagnosticated a fibroid tumor of the uterus. She had had a bronchial cough, summer and winter, from the age of 5 to that of 25.

Upon examining her chest, I found that she had a marked piping sound inside the left border of the sternum, opposite the second cartilage. This sound was continuous, but remittent. It was also heard on the right side of the sternum, at the same point, but not so loudly. At a later examination the sound was absent, but a little active exercise started it up, although it was then not nearly so loud as it had been previously, when the patient was not exercising, but remained in a quiescent state. The sound was not intermittent. At a later examination it was found to be intermittent and, during inactivity, faint. Again, it was remittent when loud and strong. There was a marked variation with breathing, the sound diminishing on expiration and increasing on inspiration.

*The greater part of this paper was read before the American Climatological Association.

CASE II.—Miss M. T., aged 46, a school-teacher, had for three years had an eye trouble said to be inflammation of the optic nerve. She had come from a remarkably gouty family, and applied to me for relief from rheumatic pains in the right lower extremity. These pains were at first located in the thigh, but for the last few days had existed also in and around the right knee. She was extremely susceptible to the action of belladonna. A doctor had once dropped atropin into her eye; and she was detained in his office for a number of hours, owing to the toxic effects of the drug.

While examining her heart, I discovered the sound, which I call a sub-sternal squeal, stronger on inspiration than on expiration, but continuous. I also heard over the heart a faint systolic sound, which seemed to be mitral. Sixteen days later I failed to hear either the above-mentioned sound or the murmur. I have several times since had an opportunity to examine her, and have at subsequent visits noted that there has been no evidence of a return of the sound.

CASE III.—B. J. M., aged 18, a graduate of Girard College, who had always been healthy, vigorous, and robust, came to be examined for the post-office service, thinking himself physically well. The heart was a little irritable, and the pulse 72. In the cardiac examination I asked him to breathe deeply, and the first inspiration seemed to start up this piping squeal, which afterwards subsided, only to be reproduced by rapid respiration. The point of greatest intensity of this sound was at mid-sternum, opposite or a little above the third cartilage, and in that immediate neighborhood. At a later examination this sound failed to be developed by rapid respiration or exercise.

CASE IV.—Mrs. K., a widow, aged 44, with no children, whose former husband had been a victim of specific disease and had communicated it to her, had considerable palpitation with reduplication of the sounds. After having attended her many years, I one day discovered this same sound over the body of the heart. The exact location of the most marked sound was not indicated in the history of the case; but it was about mid-sternum, opposite the second cartilage. I have seen the patient almost monthly since that time, and have not heard it again. The sound disappeared during expiration, and at the end of inspiration it was loudest. The sounds of the heart were markedly reduplicated. The piping sound had disappeared before the next visit, and has never since been noticed.

CASE V.—Mrs. R. K., a childless widow, aged 69, had evidences of old chronic pericardial adhesions together with anginous symptoms. The latter have continued during the last five years. She has had neuralgic and rheumatic pains at times. The sound in her case was heard about opposite the third cartilage, and was intermittent. It was of the same high-pitched, piping character.

CASE VI.—R. P., a male, 59 years old, an accountant by occupation. He was sent to me by Dr. Walter M. Ziegler, of Philadelphia, as an extreme neurasthenic, which condition was coupled with strictures of the rectum and urethra. He had shortness of breath at times, probably from extreme weakness. No swelling in his lower extremities had ever been noticed. The heart sounds

were normal. At mid-sternum opposite the cartilages of the second ribs a marked squealing sound was heard. It was more distinct during inspiration—continuous but remittent, which variation followed respiration. Exercise increased it. At a second visit it was lost but a little active exercise caused its return. At a third visit it was absent and could not be reproduced by active movement or rapid respiration. It was never heard again.

In one case I heard the louder or inspiratory sound with my ear 4 inches from the chest wall, and in another case during held respiration it gradually ceased.

The sound is clearer, lower pitched, harsher, coarser, and much louder than is the "bruit du diable," or venous hum of the veins of the neck in extreme anæmia, which hum it seems to resemble more than any other sound. It resembles, to some extent, the hissing squeal or singing of a boiling tea-kettle. It is more like a shrill musical whistling than a humming sound. It is remittent when strong, is loudest on inspiration, and becomes faint or is lost on expiration.

The continuousness of this sound shows that it is not produced at the aortic, pulmonary, or tricuspid orifice; otherwise it would cease when the blood-current is stopped by the shutting of the valves at these orifices. The only places in the heart at which there could be a continuous sound, such as the one described, would be in the blood flowing into the right or left auricle, and these two places in the heart are the only ones where the respiration has a perceptible modifying influence upon the flow of blood; but, again, the shutting of the mitral and tricuspid valves has a modifying influence on the current, which would be perceptible in an abnormal sound connected with it. The point of greatest intensity of the sound is a little to the left of the median line of the sternum, at or just below the second cartilage. I therefore locate the sound at or near the upper part of the left auricle, where the pulmonary veins empty into it.

At first I considered it to be due to a peculiar constriction of a blood-vessel, perhaps a strictured point; and later I was inclined to think it was due to changed conditions of the blood, altering its fluidity. As to the first idea, I reasoned that if it were due to stenosis of a blood-vessel it would be more constant, and that it would, when absent, reappear whenever the current was hastened. Such was not the case, even a short while after the sound had ceased. As to the second supposition, that the sound was due to an alteration of the blood, a sound thus produced would, I believe, be more constant; and, at the same time there was in these cases no evidence of anæmia or other symptoms of changed blood conditions that would lead one to suspect such a condition. I have examined many persons with extreme anæmia and other marked blood disorders, without having heard such a sound; and in anæmic murmurs the sound is at the other side of the sternum, and is soft and distinctly systolic. The sound in my cases was certainly affected by respiration, as it was frequently faint or lost during expiration and present, at the same examination, on inspiration.

If the murmur were in the auricles, the flow of blood would be more or

less influenced by the action of the heart, *therefore we may conclude that the interior of the heart is not concerned in the production of this sound.* Having thus excluded the four orifices and the four valves of the heart, as well as the auricles and ventricles, we must look for the causation in the vessels concerned in the aëration of the blood. In what period of the respiration do we hear this squeal? It is loudest in and increases with inspiration, at the time when the blood flows into the lung. Now, if this is the case, the sound must be in the pulmonary artery inside of the lung, which carries the blood to the lungs after it has passed through the right side of the heart. After aëration, or during expiration, the arterial blood flows out of the lungs into the pulmonary veins and back to the left auricle. Now, if the sound were loudest on expiration, we should say that the abnormal sound is in the pulmonary veins; but the facts all point to the pulmonary arteries as the source of the sound.

Description of the Sound.—It is louder, stronger and coarser (indicating a larger vessel and a more active flow of the blood) than the sound heard at the base of the neck when the jugular is pressed with the stethoscope; but it is of the same general character. Its location under the sternum places it beyond the reach of any pressure. It is not influenced by the action of the heart; that is, one cannot find any change in the sound with the systole or diastole. During inspiration there is a marked change. Just at the commencement of inspiration the sound becomes gradually louder and more pronounced until the beginning of expiration, when it begins to diminish. In some cases it was not audible after the commencement of the act of expiration.

Conclusions.—It would seem that the value of a knowledge of this murmur is four-fold: First, that it is evanescent. Hence one observer may hear it and remark upon it; and when the patient seeks the advice of a second physician, the latter, hearing no sound, may charge the first medical adviser with dishonesty or lack of ability. The great majority of physicians would call it a heart murmur.

Second, *that it is not an indication of a serious disease.*

Third, *that no treatment is required.*

Fourth, that from the fact that it is dissociated with any apparent symptoms, general or local, it is of value to pension, insurance and military examiners, and others engaged in important physical investigations of the cardiac region.

A knowledge of this sound might forestall an unfavorable prognosis. The importance of a correct diagnosis and prognosis can be illustrated by the following case in which a useful life was dwarfed if not ruined by the discouraging prognosis of a physician who after examining the patient said he had a serious disease of the heart, one that would be a menace to his life as long as he lived, so that it was absolutely necessary that he should lead a quiet circumspect life. The physician was the justly celebrated Dr. Gerhard, of Philadelphia, "the father of American Physical Diagnosis." The patient must have had at the time marked evidence of disease, which being acute, the patient recovered. In 1890, thirty-five years later, I carefully examined him and found the heart apparently normal in every respect. Since he heard the un-

favorable report given by Dr. G., he has been afraid to work, exercise, or to be left alone, dying many deaths each year:—A life made miserable and its usefulness destroyed by a hasty conclusion.

A good rule in medicine is "Don't be in a hurry with your opinions, especially when the disease is of recent origin and out of ocular view. Withhold your opinion so that you can have time to properly estimate the gravity of the case."

THE PENSION CLAIMANT AND VISUAL IMPAIRMENT.*

By SAMUEL D. RISLEY, A.M., M.D.,
PHILADELPHIA.

GENTLEMEN:—It is not without embarrassment that I attempt to present any phase of disability before your experienced National Association of Pension Examining Surgeons.

My conception of your function is that, in some sense, you constitute a court of investigation, and that your aim is to be just to both the pension claimant and the government. My own experience, not as a pension examiner, but in the position of expert in court, has taught me how difficult the task must be which often confronts you in ocular affections. Your sympathies, I feel sure, have often been excited in behalf of the prematurely aged and half broken victim of the hardships of an army campaign. I cannot forget the striking contrast I once witnessed some years ago, when addressing a company of veterans of the Civil War, between this war worn company, and their neighbors who had assembled on Memorial Day to do them honor. Although contemporaries in age they seemed to belong to a previous generation, so comparatively aged and infirm did they appear. When we add to these general and premature infirmities a concomitant failure of eyesight, our compassion is awakened.

I purpose discussing with you to-day in some of its aspects, the failing or lost vision in relation to claims for a government pension, viewing the claim in the light of compensation for damages sustained. In this endeavor I can, of course, view the matter only from the standpoint of personal experience with claimants for damages before the courts. They fall quite naturally into two groups:—

First.—Those who have without a doubt sustained injuries, either by direct traumatism or by disease contracted unavoidably in the service, *e.g.*, rheumatism which has wholly or in part manifested itself as a rheumatic iritis, and has caused a permanent impairment, or possibly a complete loss, of sight in one or both eyes; or nephritis, as a result of which vision may have been lost or impaired by albuminuric retinitis. These affections are obvious. In this group I conceive that you find no difficulty in determining the justice of the claim or in fixing the compensation under the rules furnished for your guidance.

* Read at the Eighth Annual Meeting of the National Association of United States Pension Examining Surgeons.

Second.—There is a large group of persons past middle life who notice a steadily advancing impairment of sight. To them the only explanation is the hardships of their service in the army. They are prone to hark back to this, as in all their ills, as the *bête noire* of their lives. They are ignorant of any other reason and therefore this is to them a sufficient explanation, and you are to pass upon the justice of their claim.

An expert study of the eyes may reveal any one of many conditions, all of which are quite as common among their neighbors of like age and degree, who had not seen service under the government. Among the common causes of failing sight may be mentioned the physiologic failure of the range of accommodation in the eyes consequent upon hardening of the crystalline lens with advancing years. In the presence of hypermetropia of considerable degree, with or without astigmatism, there is, after middle life, greatly impaired vision both for distance and in near work, but the impairment is corrected by suitable glasses and, therefore, can form no just cause for a claim to increase of pension since these defects are congenital. For illustration, I may relate the case of a man who sued a railroad company for damages for injury to his eyes in an accident. His attorney sent him to me for examination. His vision was only one-tenth in each eye, but the eyes were healthy, and glasses which corrected his very high degree of refraction error gave him normal vision. My friend, his attorney, very properly declined to prosecute his claim for damages since his impaired vision was due to a congenital anomaly and therefore had no necessary relation to his accident.

There are, however, other causes for loss of vision which belong to this group:—cases where the increasing impairment of sight is due to intra-ocular disease which leads to degenerative changes in the lens, vitreous body, retina and chorioid, often resulting in blindness from cataract, or from chorioidal atrophies, etc. Cataract is by no means to be regarded as one of the necessary concomitants of old age. The disease of the uveal tract of the eye, that is to say, the vascular chorioid, is, perhaps in the majority of cases, one of the local manifestations of disease affecting the general vascular tree, the eyes being afflicted much as the heart, liver, and kidneys become involved in the general disaster which is steadily settling upon the entire organism.

In such a case the problem to be solved is by no means a simple one. Who can answer with assurance as to how far the exposure and strain of army life are responsible for the impaired metabolism associated with the blood-vessel disease? While these conditions of impaired health and eyesight are very common in civil life, furnishing but one of the protean manifestations of disease which mark the passage of the years leading from middle life up to old age, it should nevertheless be borne in mind that the men who have sustained the hardships, the toil and the shocks of army life are older, year for year, than are their neighbors. Their claims for indemnity should not therefore be lightly set aside, certainly not without duly considering the facts mentioned. To this general group belongs also the individual who, having passed the meridian of physical manhood, suffers impairment of sight from glaucoma. The chain of pathologic events leading up to this serious form of ocular

disease is not infrequently in all respects similar to that leading to opacity of the lens and vitreous body. It is a local manifestation of blood-vessel disease and impaired metabolism.

To decide how far such claims are to be recognized by the Pension Bureau is to decide one of the most far-reaching, complex and perplexing of economic and sociologic questions, one which at the present time is agitating the courts and legislatures of both England and the United States. The Employers' Liability Act in England and like measures in our own National Congress and some of the State law-making bodies manifest a positive trend toward a reversal of earlier adverse decisions by the courts. In a word, if the government shall decide to pension, not in the general method which has been adopted, but by increase of pension to the class of persons I have described above, are not corporations and all large employers of labor equally liable for the inevitable impairment of function consequent upon the hardships to which the employee is subjected by his labor or service?

I do not know to what extent your Board of Examiners may have had to contend with those making fraudulent claims based upon simulated disease of the eyes or blindness. I have occasionally met with instances where a home for the winter in the wards of a hospital was considered desirable. At other times, blindness of one or both eyes has been simulated and set up as a claim for damages.

It requires a very cunning and learned person to deceive the physician who is familiar with the physiology of vision, and has had some experience in the treatment of ocular disease, but I can well understand how one who is not familiar with the special intricacies of ocular examinations might be misled, on the one hand, by the fraudulent complaints of the malingerer or, on the other, unjustly suspect fraud upon the part of an innocent claimant in cases of obscure ocular disease.

By way of illustration I recall the case of a man brought by an attorney whose aid had been sought to secure damages from a railroad for the loss of vision in one eye. While the train was passing through a dark tunnel a mass of stone or mortar had fallen between two cars and broken the glass in the car door. Fragments of the glass, it was claimed, had entered the right eye, since which, the eye had been entirely blind. There was no external evidence of injury but the man asserted that there was no perception of light. I suspected the man of malingering. The ophthalmoscope revealed no evidence of disease but this was not sufficient evidence of fraud. He was then placed facing the light and both pupils contracted. But the iris of a blind eye may contract consensually with that of the seeing eye in the absence of any faulty innervation. The good eye was then covered, but the iris of the blind eye still contracted with light. It therefore did have perception of light at least. But, gentlemen, it is somewhat rare to find an eye so blind that the iris will not respond in some measure to strong light. For additional evidence I then required him to read the test letters first with the good eye, in which vision proved to be normal—6/vi,—and of course no letters were to be seen with the eye he asserted was blind. A 6° prism was placed over one eye in a pair of trial frames, base down,

and a point of light at 6 meters exposed to view, and he was asked how many lights there were. He promptly replied two. He therefore saw a light with each eye. The prism was then replaced by a —20 D. glass over the good eye, when with both eyes open he again read the test letter chart 6/vi. He must therefore have read the letters with the blind eye, since it was impossible for him to do so through the 20 D. lens over the good eye. The evidence of fraud was complete.

There are, however, cases of serious ocular disease which may render a man entirely unfit for military service, notwithstanding the fact that in good light his acuity of vision, as measured on the chart of test letters, falls quite within the prescribed limits for the service. He may be the victim of *retinitis pigmentosa*. The characteristic symptom-complex of this disease is a progressive contraction of the field of vision, and night blindness, with deposition of stellate pigment masses in the periphery of the ophthalmoscopic field; and, in its later stages, atrophy of the optic nerve with thread-like retinal arteries. It is often possible for these patients to read fine print and at the same time be utterly helpless in a dimly lighted place or after the onset of twilight. The field of vision is so contracted that even in good light they suffer a sense of insecurity on the street or in crowds. The vision is much the same as that of the normal individual who essayed to go down a flight of stairs, or cross a crowded street, looking through a long narrow tube. It is obvious that such a person is entirely unfit for the army, and if already an enlisted man, he should be discharged or placed on duty where night service will not be required, since he is, after dark, as utterly helpless as a blind man. It is possible that in the early history of the disease his request to be excused from night duty, or for discharge from the army, might be ascribed to malingering. The field of vision, however, would usually be sufficient evidence for the justness of the claim. The contracted field of vision taken in conjunction with the pigment deposits in the periphery of the retina would establish the diagnosis, although there are occasional instances where the pigment masses are nearly or quite absent.

There is another group of cases, which for want of a better term, we may designate as *psychic blindness*. This usually occurs in females, so that in your function as Pension Examiners you are not likely to meet with this affection. I have, however, met with one case in a male. The blindness in these patients is not simulated, but real, and must therefore be differentiated from malingering. It is, like hysteria, one of those strange mental phenomena, occurring in a group of peculiar individuals. I have had these patients brought to me from long distances by perturbed and anxious relatives, totally blind in one or both eyes, and have sent them from the office in an hour with normal acuity of vision, after a species of legerdemain treatment, in conjunction with the instillation of a placebo into the eyes, or by the harmless employment of the electric wall plate, the real influence which accomplished it having been the glowing recommendation of the ophthalmic surgeon by the family physician, the long journey, the awakened hope and great expectation. To instil drops into the eyes and direct them to a dark corner in the waiting room with the

statement that they will be called again in half an hour, when they will be able to see the letters, is a formula which, unlike most things we do, never fails in these expectant cases of psychic blindness.

My opinion has recently been sought in a medico-legal case of much importance and intricacy which may interest you. A man totally blind in both eyes sought indemnity in accordance with the terms of his insurance policy, which provided a stipulated sum for the loss of one eye and a larger sum for the loss of both eyes. He was totally blind in both eyes from atrophy of the optic nerves.

The point in dispute grew out of the unusual coincidence that he had had converging strabismus from childhood. As a consequence he had never used the right eye, and it was in evidence that it was amblyopic from disuse. The contention upon the part of the insurance company was that at the time the policy was issued the right eye was blind and that therefore he was not entitled to indemnity for its loss.

As a matter of fact an amblyopic eye of this class is never entirely blind. Then, too, although the brain has never learned to take cognizance of the image formed in the converging eye, the eye is nevertheless useful since it recognizes objects in the field of vision, and so affords safety from injury by moving wagons on a crowded street, and the vision is sufficient to avoid bumping the head against objects approached from the side of the deviating eye. There are furthermore cases on record where useful vision has been restored by use of the amblyopic eye after loss of the fellow eye by accident or disease.

In the case in question, however, the optic nerve of the converging and amblyopic eye had like the nerve on the opposite side become atrophic, and the eye hopelessly blind, from intracranial disease,—an entirely different matter, and widely separated in its nature and origin, from the amblyopia from disuse. I contended, therefore, that he was entitled to indemnity for its loss.

DIET AND CLIMATE.*

With Special Consideration of the Winter Season of the North.

By WM. M. GIBSON, M.D.,

UTICA, N. Y.

THE climate of Central New York is that of a rather cold and damp region. The winter season is long, and spring is generally backward with many relapses into winter temperature and snow storms. The summer season, however, is largely compensatory, with a full complement of heat and rain, which in a great measure insures the full crops of hay and grain so necessary in a dairy country.

Situated to the south and southwest of the Adirondack mountains, and to the east of the great inland sea, Lake Ontario, from whose shores a level tract

* Read before the American Climatological Association.

of land extends to the upper portion of the Mohawk Valley, its prevailing winds come from both the upper and lower lake currents. From the eastern end of this long level plain the Mohawk Valley extends in a direction a little south of east for a hundred miles, to the Hudson River. The valley has an elevation at its westerly end of only a little over four hundred feet above sea-level, but the hills to the north and south rise abruptly and break into rolling uplands and hill tops with elevations varying from one to nearly two thousand feet above sea-level within a few miles of the valley. To the south these hills rise, range after range, until they meet the foothills of the Delaware Mountains, while to the north, within distances varying from ten to twenty miles, they merge into the lower spurs of the Adirondack forest. To the north of the valley the flora is almost entirely Canadian; we find it also on the hills of the southern slopes, but in the lowlands the more varied Alleghany flora is met with everywhere. We have thus in Central New York marked evidences of two distinct climatic influences as shown by a study of its vegetation.

The meteorological features of Central New York may be briefly summarized as follows (taken from records made in the Mohawk Valley for twenty-five years) :—

Mean barometer	29.57
Mean temperature	44 degrees
Mean humidity	66 per cent.
Rainfall	45.5 inches
Rainy days	135
Days mostly cloudy or overcast	168
Prevailing wind, west to north	160 days
Freezing temperature	150 days

The remark that the climate is changing is often prompted by an unseasonable fall, winter or spring, but I can not find by consulting the records made in Central New York that any material change has occurred during the last fifty years. The mean temperature remains the same, and the characterizing meteorological features persistently record year in and year out. Possibly there is a difference in precipitation; certainly we have an apparent reduction in the snowfall of the early part of the winter. A close inspection of a diary kept by a lumberman from 1854 to 1878 in the lower portion of the Adirondacks gives convincing proof that lumbering operations, building snow roads and log hauling, were commenced several weeks earlier than they are now. Then, too, the line of September killing frosts seems to have retreated a little farther north from the lines given in the Smithsonian reports during this period. All of our canning factories are able, with an occasional exception, to secure a full pack of corn; with the killing frost occurring about the middle of September this could not be done. Possibly backward springs are of more frequent occurrence, but if so this change results from the same causes which lessen the early winter precipitation and hence the years average about the same decade after decade.

Compared with the more favored portions of the Middle Atlantic slope,

the winters of Central New York are long, cold and sunless, and have also the very trying elements of sudden changes in pressure and temperature. Fully 65 per cent. of our winter days are mostly cloudy or overcast. This deprives us of much of the exhilarating influence of a cold clear atmosphere—one of the remedial virtues of the air in Colorado and other sections of the Rocky Mountains—which we would possess if our winters were more favored by sunshine. Winter sets in, as a rule, about the middle of November, and lasts pretty well into April. Cold waves with sharp zero weather are of frequent occurrence but are seldom of long duration. A zero day with rain in the following twenty-four hours is frequent enough to be a very trying feature of the climate. The coldest weather is experienced from the middle of January to the middle of March. A calm winter day is rare; moderate to fresh winds blow from some quarter most of the time, and a full quota of blustering stormy days with brisk and high winds, and the blasts of all the western-born blizzards, are noted in our winter records. One of the most depressing features of our climatic conditions is the recurrence of wintry weather during the latter part of April and the early part of May. After passing through a long winter into seasonable spring weather, it is more than discouraging to be snowed under again and have to endure bitterly cold winds from the northwest. May is seldom free from such weather and the last week in this month generally furnishes a record of severe frost.

But after all the climate of Central New York may be considered a healthful one. This region was the home of three tribes of the most stalwart and powerful of the American aborigines, the confederacy of the Iroquois. It contains a large urban population and its rural districts are interspersed with numerous small towns and villages. The native-born population of the rural districts is vigorous and still retains the virile qualities of the early settlers; the larger towns and cities while showing the lower birth rate and higher death rate of city life, are remarkably free from local conditions which tend to unhealthy influences. Aside from the manufacturing sections tuberculous disease is not met with as frequently as it is in many farming districts of other northern States. Inspection of the vital statistics shows that we have the full proportion of the increased death rate from diseases of the heart, arteries and kidneys. I believe also that rheumatic disorders and their effects are met with in greater proportion than in more clement climates. Malarial disease is met with only as imported from the malarial districts of the seacoast and the south and west. For many years the writer has closely observed the effects of the fall, winter and spring months on the more prominent disorders of advanced life, especially those of the kidneys and cardiovascular tract. There is no question as to the depressing and exhausting effects of the long winter season on such affections. These patients are subjected to a strain on nutritive power which, if not carefully guarded, exerts a most serious influence on the natural resistance to degenerative change. As a rule the coming of cold weather seems to tone up nutrition, especially if the weather is clear, bracing and cool, with not too much rain, but as the winter wears on into the coldest period of the season, the devitalizing effects of prolonged indoor life are soon observed. Those who

are fortunate enough to be able to seek a winter residence in the south, on the Pacific coast or abroad, return late in spring in far better condition than those who, even in the most favorable surroundings, are compelled to endure the cold gloomy skies and storms of our long winters. Manifestly but a small number of persons needing the change to a less severe climate can avail themselves of this means of prolonging life and staying the progress of chronic renal, cardiac and vascular disease. There are some, too, whose financial condition permits travel to any part of the earth, who persistently refuse to leave home, and others who, dreading the discomforts of a journey, prefer to remain north and fight it out with the cold.

It has long been recognized that proper supervision of diet is the most important factor in the treatment of chronic visceral disease, especially in the treatment of renal and cardiac disease. Atrophy is the essential morbid change that accompanies the decline of vitality in advancing years; degenerative change, too, in the heart, blood-vessels and kidneys is so frequently a purely senile change that we rarely have the one without the other. Impairment of nutrition naturally is felt by the aged far more than it is by the subjects of visceral disease in younger life. If loss of nutritive power hastens the progress of the morbid change in the heart-wall and kidneys in the decades of the prime of life, it certainly behooves us to guard very jealously the uncertain digestive and assimilative powers of the aged, especially in the season when out-door life calls for greater strain on these processes, or renders them less active, through the devitalizing effects of confinement to indoor life. It has been no small part of the writer's work to care for many of these patients, and it has become a fixed duty to supervise the diet of each case with full recognition of individual tendencies and surroundings. This naturally is a bore to the patient and a tax on the physician's time and perhaps patience, but the value of this therapeutic measure soon becomes apparent to the patient, and it certainly relieves the physician in his general care of each case of the burden of many trying complications.

One of the noticeable effects of the cooler weather in the early fall is the increase in general nutrition, with some gain in weight, which follows the increased desire for food. The writer has found it is at this time of the year that the subjects of chronic visceral disease and persons of advancing years need the most careful watching in dietary matters. Increased consumption of food, even if digestion is equal to it, necessarily taxes elimination and the coming of colder weather very surely depresses the eliminative power of the skin. In the late summer and early fall the ingestion of green vegetables and uncooked fruits carries into the digestive tract an enormous number of ferment spores, which with considerable certainty cause digestive disturbances and render digestion more easily perverted by the tax imposed on it in colder weather.

Probably no more valuable articles of diet for conveying the necessary carbohydrates to the tissues of the body can be made use of than cereals possessing their full nutritive value. High-bolted white flour and potatoes, notwithstanding their full complement of starch, contain little or no diastase and

tax the pancreatic function to its full limit, hence cereals possess a food value superior to starchy foods bereft or devoid of gluten. These nutritious and easily procurable foodstuffs (cereals) should enter largely into the daily dietary of people residing in northern climates. They are suitable for all seasons, but can be made use of with great nutritive benefit in the colder period of the year. The writer has long been convinced, however, of the comparative worthlessness of cereals placed on the market in small packages, possessing the supposed merit of relieving the strain on the cook and kitchen store. To be sure, a few minutes' cooking will prepare them for the table, but the nutritive value of the gluten and starch has been seriously impaired by the preparation to which they have been subjected in the process of manufacture; the starch is found thoroughly dextrinized and the diastase-bearing gluten inert. A few years ago toward the end of my summer vacation I found a large number of packets of these cereals in my summer stores; their presence was due to a mistake in filling the order. It occurred to me that I might test their nutritive value on a flock of young turkeys, and accordingly I fed half the flock on these cereals and the rest on corn meal. It soon became apparent that the corn-fed turkeys grew apace, while those receiving the cereals fell behind. After a fortnight I changed the feeding, giving the corn-fed turkeys the cereals and corn meal to those which had first received the cereals; again a change in the condition of the birds became very noticeable, the prepared cereals evidently possessing little or no fattening value. In the fall, winter and spring dietary I exclude these preparations, and insist on the use of cereals which possess the food value of the entire grains. However, cereals need not be used to the exclusion of other starchy foods such as bread and potatoes. The latter having been so long used as staples of the daily food-supply, their deprivation is generally considered a hardship; but I really believe it is better to exclude them from the meal at which the cereal is taken. Then, too, cereals are sometimes contraindicated where intestinal digestion is seriously impaired; but much valuable aid to the digestive process is to be found in the various vegetable ferments, and their power as starch splitters should not go unrecognized in the search for stimulants to a depressed or perverted digestion. With the cereal, provided there is no special contraindication from digestive disturbance, some form of fat can be taken with much nutritive benefit. Cream is the most palatable fat, but it should not be used *ad libitum*, and in many instances rich milk or "top milk" can well be substituted for thick cream. As to the use of meats and other proteids, it is evident that no rule can be formulated to guide us in the direction of this part of the dietary. The individual tendencies, the condition of the digestive functions and especially of elimination, the age and habits of life, it seems to me, are more to be considered than the reports of laboratory experiments and investigations into the fate of the proteids in general metabolism. Apparently there is very little reason for substituting the so-called white meats for beef or mutton; in fact, we have reason to believe that the latter are easier of digestion and more nutritious.

The question of the quantity of food is one not so easily dismissed. All persons afflicted with chronic visceral disease should be taught to ascertain

and respect the limit of digestive power. This is an exceedingly difficult thing to do, but my experience teaches me that the time I have given to the study of the digestive power of my patients has given better results than any other portion of my services. Proteids, with the exception of milk, should as a rule be partaken of moderately, and meat and milk should never be included in the same meal. This proscription can be found in the ancient Hebrew law, and modern digestion has not developed to the extent of properly digesting meat and milk at the same time. Milk and milk foods, porridge, gruels and the like, are suitable articles of diet for any meal or any season. It is rather surprising, however, to find a large number of people, especially in farming districts, who have an actual repugnance for milk as a food, and, too, the number is not small of those who cannot digest it as it comes from the dairy. Butter-milk, artificially soured milk and junket are milk foods agreeable to many persons, and are often perfectly digested by those who cannot take sweet milk. The use of oil as a food is entering more and more into daily dietary in the north. The vast influx into our country of the peoples from Southern Europe is in a certain measure responsible for this, at least for the more extended use of oil in the homes of our working people. Olive oil, pure, and with admixture of our native oils, is a generous nutritive addition to the food supply of those who live in the colder regions of our country. I firmly believe these oils can be substituted with great benefit for much of the meat consumed by our working people. It has long been my custom to give olive oil to tuberculous children, or to children born of tuberculous parents, throughout the colder months of the year; in some of these children the increase in nutrition was so noticeable that the mothers made the oil as constant a food as bread, butter or milk.

The subject of unseasonable foods is worthy of consideration when we stop to think how the markets of the North are stocked with foodstuffs of every climate and zone at the present day in season and out. Without doubt these additions to the table supply are welcome luxuries, but they should be used as luxuries only. Nearly all the green vegetables of the South are grown in the North in season, and are suitable articles of diet for such season. Cucumbers, string beans and strawberries in the later days of winter, when the difference between indoor and out-of-door temperature may be seventy degrees, will furnish very few calories when compared with an equal bulk of the root and tuber vegetables grown in the North and stored for winter food. The southern fruits, too, are delicious and make a grateful variety, but should not be used to exclude the apple from its place as a seasonable fruit. The daily use of oranges and grapefruit, especially the latter, is to say the least questionable. Rheumatic and gouty people should eat only the sweetest oranges and these sparingly, and might better by far give up grapefruit. The extreme acidity of this variety of the citron genus cannot fail to pervert intestinal digestion if eaten even in moderation by the gouty.

Referring again to the subject of the quantity of food to be eaten by those afflicted with chronic visceral disease who remain in the North during the colder months, the question of a very much mixed diet may be given some

consideration. I think we all have noticed that diabetics excrete less sugar while adhering to a diet consisting of two or three kinds of food, for instance milk, eggs and a cereal, than they do under the restriction of the standard diabetic diet; we certainly have seen the benefit of Von Noorden's fortnight diet of oatmeal and butter in this disease. The tax on digestion resulting from the ingestion of several different dishes is heavier than that from a larger amount of one or two kinds of food. The subject of an arterial and myocardial degeneration or of an interstitial nephritis may well avoid the mixed diet of a sumptuously served table the year around, and especially during the colder period of the year can a plain nutritious diet be made the rule of living. A well-controlled appetite is a safeguard against the development of disease in all stages of life from childhood to old age, and it is assuredly a potent means of holding in check the progress of chronic visceral disease of adult life, or the degenerative change of advancing years. The observations of more than thirty years have taught me that the maintenance of good health in northern climates depends very largely on the use of a nutritious seasonable diet and one which is sufficient for the daily demand on energy but no more. Gluttons are rarely long-lived in any climate, and the bracing effects of cold weather may be a bane instead of a benefit to one who eats beyond his needs. In considering the most suitable diet for the aged we have to bear in mind the essential cause of the senile change, protoplasmic increase and nuclear loss (Minot), and the resulting atrophy. A diet which taxes digestion and elimination the least, and which is also nutritious, is without doubt the one that will support the failing functions of life and nourish the wasting structures. It is at this age that individual tendencies must be watched, and yet not curbed too far, for sometimes a reasonable bent of inclination can be permitted to afford a better conservation of nutrition. Here, too, my observations have led me to believe that the aged living in northern climates can receive nutritive benefit from the moderate use of alcoholic stimulants. I do not care to enter into a discussion of the alcohol question; I will admit that the young and middle aged if in good state of health do not need it and are probably better off without it, but I do know that the waning energy of advancing life is in some way supported by the judicious use of alcohol.

It is a very easy matter in the care of our chronic cases to fall into a rut which is often disturbed only by some complication or unlooked-for symptom. The selection of a diet for any of our cases does not imply that it is not to be changed, for possibly an addition is needed, or some corrections should be made, within a few days of its adoption. The effects of a radical change in diet should be carefully noted, especially in the various disorders of advanced life; here the balance of nutrition is too easily disturbed to allow a serious drain on nutrition to go unchecked. I think also we are too apt to take for granted that our patients follow our directions faithfully; a little inquiry into the acceptability of diet restriction and the willingness of the patient to forego the pleasures of the table, will often save us much trouble and secure the results planned for the patient. If we stop to think that love and hunger are the greatest factors in the moulding forces of animal evolution, we cannot

fail to appreciate the power of the appetite for good or evil in the life of the human species. The admonition of the author whose Latin we plodded through in our younger days is to-day as valuable as it was when he portrayed the character of one of the worst figures in Roman history: "*Omnis homines, qui sese student praestare ceteris animalibus, summa ope niti decet, ne vitam silentio transeant veluti pecora, quæ natura prona atque ventri obedientia finxit.*" Too many of our patients obedient to the belly thwart our efforts to check the progress of incurable disease by yielding to the temptations of the appetite. The chapters on dietetics are the most valuable pages in our volumes on therapeutics, but this knowledge will avail the sick naught unless acquired by the physician and dispensed liberally in his daily work.

THE SIGNIFICANCE OF SENSE DECEPTION AS A SYMPTOM OF INSANITY.*

By W. W. HAWKE, M.D.,

Chief Resident Physician, Philadelphia Hospital for the Insane.

MANY of the symptoms of mental disease are but exaggerated or perverted forms of normal faculties, and such symptoms can be understood only in their relation to normal thought and activities. Many of the terms used in describing the mental condition of insane persons—such terms, for instance, as confusion, illusion, anger, suspicion, fear, excitement, emotions, impulses, hallucinations and many others—are equally applicable, at certain periods and under certain conditions, to normal persons. Disturbances of sense perception are especially characteristic of certain forms of insanity, and consequently their significance is liable to be overestimated. For this reason it is well to call attention to the limitations of sense deception as indicative of mental disease, and to the tendency of the physician to depend too much upon these symptoms in forming an opinion about the condition of a patient's mental health.

Regarding hallucinations and illusions, it is not necessary to determine in a given instance whether the disturbance is hallucinatory or illusory. Since in either case the object perceived is not present as it is perceived, it makes little difference whether it is present at all or not. We may speak of sense deception as hallucination when there is no known source of stimulation, and as illusion when there is obviously a sensory stimulus, as, for example, when one is walking along the street at night, and mistakes a distant tree for a man.

An acknowledged hallucination is a more reliable symptom when it is mentioned spontaneously by the patient than when extorted from him by questions. In the first place, when the examiner makes a definite attempt to elicit hallucinations, he is likely to find what he is looking for, whether it be there or not. Even an experienced and unprejudiced examiner may form a false impression

* Read before the Neurological Society, Philadelphia.

from a hasty examination, and learn later that the hallucinations which he discovered existed only in his own mind. Again, hallucinations may be falsely acknowledged by a patient, either because he does not understand the questions, as the direct result of suggestion, or purposely for sport. For example, if the physician asks such questions as, "Do you see angels? Have you been in Heaven? Does God talk to you?" the patient may suspect that the physician is making fun of him, and may answer all questions in the affirmative with the idea of keeping up the joke.

Again a patient may acknowledge that he sees things at night, referring to his dreams and taking it for granted that the story which he tells will be understood as a dream. This is shown by the following quotation from an initial mental examination of a woman recently admitted to the hospital:—

"What has been troubling you?
I lost a boy about eleven years old.
Have you seen your boy since he has been dead?
Yes, I saw him going to school.
Since he has been dead?
Yes."

A few days later, after she had become more accustomed to her surroundings and was able to give more careful attention to questions, the patient was asked:—

"How do you sleep?
Not very well.
Do you dream?
I dream sometimes of my boy what's dead. I see him a couple of times with his school bag, and I say 'Hello, Louis.'
Were you asleep or awake when you saw him?
Asleep."

It is clear from the second examination that the supposed hallucination elicited in the first examination was a dream, and was recognized as such by the patient.

Again, a patient may refer to a dream as a waking experience because he believes it to be such. This is not in itself an indication of mental disease. Almost any person may be deceived by a dream that is in every way consistent with real life. This does not often occur, because a dream does not usually seem very real except while it lasts. But the same can be said of many experiences of waking life, some of which are practically forgotten very soon after they occur. This is especially true of the thoughts that pass through one's mind when one is sleepy. Some dreams are more vivid, more interesting, and more likely to be remembered than are some real events, and in deciding whether a given experience was a life-like dream or a dream-like event, we cannot depend entirely upon our sense of reality. Generally, however, we have some external evidence. We are not deceived by a dream that is impossible under the laws of space, time, gravity and energy, because we have more confidence in these laws than in our senses. In like manner we regard as a dream any experience, however possible in itself, which conflicts with the experience

of yesterday, as we remember it. If we know that we were in Philadelphia all day yesterday, we are no more liable to be deceived by a dream of a trip to New York than by a dream of a trip to the moon. But we may be deceived by dreams of insignificant events which occupy but a moment of time. For instance, a man who is accustomed to being called in the morning may be wholly at a loss to know whether the call which he seemed to hear a few minutes ago was a dream or a reality. However much he may wish to regard it as a dream, he may have so distinct a memory of having heard and answered the call that he rises without looking at his watch, and learns later, to his sorrow, that he has needlessly sacrificed several minutes that he might have spent in bed.

In distinguishing between dreams and real events, the educated person has a great advantage over the uneducated. The ignorant man, having but little knowledge of natural laws, places undue reliance upon his senses. To him "seeing is believing," and consequently he is often deceived. Anyone who believes in ghosts is as liable to be deceived by a dream of a ghost in his bedroom as by a dream of looking at his watch or of hearing the call to rise.

A negro who was admitted to the hospital last winter stated that one day when he was ill in bed with a severe cold, the Lord appeared to him on a sort of step-ladder that seemed to be in his room, that he came down the step-ladder to the side of the bed, shook hands with the patient and spoke to him. This was probably a dream rather than an hallucination, although the patient was confident that he was awake at the time. Careful questioning showed that the patient had often heard others testify about their religious experiences, that he had habitually accepted such manifestations as real, and thought that every religious person ought to see the Almighty in some shape or form. All the past training of this man was in favor of his implicit acceptance of his dream as a real experience. Much allowance should be made by the physician for the patient's lack of education, and he should not take too seriously the visions that are evidently due, not to insanity, but to superstition and ignorance.

Assuming that superstition is an excessive belief or credulity arising from the encroachment of faith on the right of reason and knowledge, and resulting in a tendency to ascribe to occult or supernatural causes phenomena which admit of natural explanation, and that ignorance is want of knowledge about a certain matter, not necessarily from incapacity to understand about it, but possibly merely from lack of information, these should always be considered in determining the degree of sense deception.

I would repeat that many sources of error may be avoided by allowing the patient to take the initiative in telling about his sensory disturbances. Those whose insanity centers upon hallucinations are frequently only too eager to tell any sympathetic listener how they are tormented by the threats of people whom they cannot see. The man who changes his lodging place every few days in order to escape from the men who are following him everywhere he goes, and whom he hears holding a whispered conference relating to a plot against his life, does not wait to be asked if he hears voices. A woman patient whose case is diagnosed as alcoholic delusional is in constant terror because

she hears voices from outside saying that she is to be burned alive, and that this is her last day. She is a person of fair intelligence, and at times appears to recognize the absurdity of the thing which she fears. Such a patient as this, whose persecutory delusions are wholly dependent upon hallucinations, does not leave us in any doubt as to the reality and persistence of the sensory disturbance.

But there is occasionally a patient suffering from active hallucinations who is sufficiently rational to know that the physician will not believe his story, and therefore tries to conceal all evidence of the sensory disorder. In such cases it is sometimes possible to obtain full information from the patient in answer to questions which have no apparent reference to visions and phantom voices. Even after such a patient has unwittingly acknowledged his hallucinations it may be well to keep him ignorant that his secret has been discovered, in order that further details may be learned from him when he is off his guard.

In other cases the patient does not fully understand the questions, and therefore fails to answer them correctly. The following extract from a recent examination illustrates this point:—

“Do you hear any voices talking to you?
My mother.
Is your mother living?
Yes.
Do you hear her when she is not around?
Not lately.
You hear voices sometimes, don't you?
Yes.
What do you hear?
I hear a noise of cats around me.
Do you hear God talking to you?
I do not.”

At this point the subject of voices was dropped; later in the examination it was introduced again, but, with care that the patient should not recognize it as the same subject.

“Is anyone trying to do you harm?
I think so.
In what way?
They talk about me; they call me hypocrite.
Who are they? Your own people?
No.
Are they strangers?
Yes.
Do you hear them at night?
No.
You hear them during the day?
Yes.
Have you heard them in this place?
No.
When did you hear them last?
Yesterday.
How long has this been going on?
Five or six months.”

That this patient was not intentionally evasive in her answers to the first question is shown by her willingness to tell about her hallucinations, when once started on the subject. The failure of the first questions to bring out the facts sought for was due primarily to inattention and lack of interest on the part of the patient. The subject could hardly have been forced upon her attention without making her suspicious as to the importance of the facts, but she was easily led to it from another subject.

It is not to be denied that reliable information about sense deception is frequently obtained by means of pointed questions, and if the indirect method fails, after a fair trial, there is little to be lost by approaching the subject directly, even at the risk of some distortion of the facts by suggestion. But the advantages of obtaining the information indirectly, when it is possible to do so, are great enough to warrant the examiner in habitually trying the indirect method first, although it may take a little more time.

After it is established beyond question that hallucinations are present it remains to be determined what bearing, if any, they have upon the mental condition of the patient. Illusions and hallucinations are by no means inseparable from insanity. All sense perception is to some extent subjective. Part of what we see comes from the object before us, and part comes from our own mind. This is illustrated by a story of three landscape artists who went out together to sketch. They all sketched the same landscape, each working independently and each attempting to be strictly true to nature. But when the three sketches were compared they were found to be quite different, each being so characteristic of its maker as to be easily recognized as one of his products.

Apart from the subjective element in normal sense perception, all persons, especially imaginative persons, are more or less subject to sense deception of an hallucinatory character. If anyone is startled by hearing his name suddenly spoken when there is nobody in sight, the notice which he will take of it depends upon his education as well as upon his sanity. One man will go on his way, scarcely giving a second thought to it. A man who is ignorant but sane may think his friends remind him that the preaching of the Gospel requires more education than he has had, he recognizes his mistake and goes back to his work. But if a man believes that he is called of God for some special purpose, and attempts to obey the call in the face of all obstacles both physical and moral, he is almost sure to be taken to the hospital, either by his friends or by the policeman. It is, however, the irrational conduct that is regarded as the symptom of disease, and not the hallucination.

The following extract is from the history of a patient who had active visual hallucinations, and could see the spirit of Elias or Jesus Christ at any time that he wished:—

“Would you obey the spirit of Elias in every respect?

Yes.

If the spirit of Elias told you to kill somebody?

Elias knows better.

Would you do it if he should tell you to?

I would ask Elias or Jesus Christ to tell me why, before I did it.

If they gave you instruments to kill someone, would you do it?

I would ask them first.

If you got the message from them, would you do it?

Yes.

Is that right?

Whatever Elias or Jesus Christ command you to do, do it. If it is my body, take it."

The reluctance of this man to admit that Elias might command him to commit a crime shows that he is not disposed to crime, and makes it seem improbable that he will be led by his hallucinations to do any harm. It is not the fact of his having hallucinations that makes him a dangerous man to have at large, nor is it the form which his hallucinations take. It is rather the fact that his conduct is controlled by the hallucinations instead of by reason and past education. Hallucinations, however harmless they may be at any given time, are too uncertain to be a safe guide for conduct, and the evidence that a man depends upon them in regulating his life is sufficient ground for keeping him in custody, even if he has shown no tendency to do any harm.

Conduct may be too strongly influenced by a mild sensory disturbance which falls considerably short of being a true hallucination. A young woman who worked in a mill had a vision of spirit forms, and heard music which seemed more beautiful to her than any she had ever heard before. She recognized the subjective character of the experience, and wondered at the time if she could be sane. But on the strength of this waking dream she believed herself capable of writing a novel about it, and believed she had unusual musical ability. The delusions which developed from this sensory experience led her to attempt various impossible feats, and in the course of time she found her way to the hospital. Her insanity showed itself not in the fact that she had a vision, but in that she took it too seriously.

The tendency to interpret all sense experience imaginatively is common among children, and not uncommonly present in normal adults. Some persons habitually see figures like puzzle pictures in clouds, trees and shadows. This may be a harmless amusement, or it may form the center of a great variety of insane delusions. The form which such illusions take is determined by the life and interests of the person who has them. The following illustration is from the history of a woman in middle life, whose strongest interests were in religion:—

"Do you still see visions?

Yes, I see them all the time, when I look out of the window. I saw our Lady of Victory around here, on one of the trees.

Do the clouds look like angel forms?

Yes, different kinds of forms. So does the cloth I wipe up the floor with.

Is there anything really in the cloth?

No, of course not.

Why do you see so much in it?

It must be God doing it.

Do you dream at night?

No, if I ever did dream I don't remember it. * * * On the morning of October 16th my mouth was open, and somebody touched my tongue.

Wasn't that a dream?

Oh no, I woke up right away. I thought somebody gave me the Blessed Sacrament."

In a more recent examination the patient referred again to this administration of the Blessed Sacrament, and stated that because of this experience she believes she is pregnant by immaculate conception, and that the other patients know that there is going to be a little Bethlehem here in the hospital. The patient was asked again:—

"Wasn't that a dream?

Certainly, I was sound asleep, but I woke up and felt the hand going away from my mouth.

Do you think you are pregnant from that?

Certainly, I guess I am.

Do you have any sensations in your body that make you think so?

Only that electricity goes up my limbs at night, that is what I imagined it is.

What makes you think there is any electricity?

Why, it must be. Some nights it is awful warm from it. I can feel a kind of sensation now, in my stomach.

How does it feel?

Like a buzzing, you know, working through the valves.

Do you often dream?

Yes, and I pick up the spread or something in my sleep, and fix it like a child in my arms."

The delusion of pregnancy seems to have developed from the dream of the Blessed Sacrament, and all the illusions which the patient has had since October tend to confirm the delusion. The tendency to see religious figures in the trees is to her imagination a special gift from God, in recognition of her miraculous conception. Every vision is carefully remembered to be reported to the priest, in order to convince him that she is not mistaken. All organic sensations and all real experiences, even to such trifling circumstances as the temperature of the ward at night, fall in line with the delusion and contribute something of evidence. The actual sense deceptions of this patient are comparatively slight and perfectly harmless. It is her attitude toward her illusions, and not the illusions themselves, that make her a proper subject for institutional care.

I would say in conclusion that if sensory disturbances were always observed with reference to their bearing on the habits of thought and action of the patient, much unnecessary confusion and misunderstanding might be avoided. The statement often seen on the commitment papers furnished by physicians, to the effect that the patient is confused and has hallucinations, is not sufficient to indicate insanity unless qualified by an adequate explanation which shows the character of the confusion and the importance of the hallucinations. If the presence of hallucinations is offered as a proof of insanity it should always be accompanied by a statement as to the patient's attitude towards his sensory disturbances, the tendency for the hallucinations to develop into delusions, and especially to what extent his conduct is liable to be influenced by them.

Cyclopædia of Current literature

APPENDICITIS, DANGERS OF EXCESSIVE OPERATIVE MANIPULATION IN.

Surgeons have conscientiously tried to do too much in appendicitis operations and have damaged patients unnecessarily. According to the principles of the pathological era in surgery they have felt bound to remove all the products of infection in a most thorough way. They have made elaborate arrangements for drainage, and taken great care to avoid infection of the normal peritoneum. All this was commendable until they learned to step over to the principles of the fourth or physiologic era in surgery, allowing the patient to do most of the work of managing infection himself. Their function to-day is merely to turn the tide of battle and place the patient in a condition to call out his own resources, by means of which he can fight the battle better than they can do it for him. Indeed, the surgical methods employed often damage the patient in such a way that these resources cannot be availed of. Failure on the part of the surgeons to protect the peritoneum by putting in a mass of gauze while at work gives the patient that much of an advantage, since the fear of infection of the normal peritoneum by pus is now known to be a fanciful fear. Failure to make very long incisions or multiple incisions gives the patient an advantage in that the shock incident to such incisions and the menace of subsequent hernia are avoided. Failure to wash or wipe the field of operation thoroughly permits of avoiding the shock and the prolonged period of anæsthesia required for such detailed work. Finally, failure to cleanse and

beautify the surroundings of a post-operative fistula is advantageous to the patient in leading to rapid closure of the fistula, through non-interference with the contraction of connective tissue. R. T. Morris (Boston Medical and Surgical Journal, February 17, 1909).

ARTHRITIS DEFORMANS, DIAGNOSIS AND TREATMENT OF.

The principal source of confusion in the diagnosis seems to reside in the fact that many fail to differentiate between that form of chronic arthritis which follows acute articular rheumatism, and true arthritis deformans. The two conditions are, in reality, as distinct as is syphilis from tuberculosis, and as easily distinguished. Such differentiation is very important, since patients with chronic articular rheumatism are greatly benefited by hot baths, sweats, and Bier's active hyperæmia, while arthritis deformans patients are made worse by these measures. True chronic articular rheumatism is always secondary to one or more attacks of acute articular rheumatism. Arthritis deformans, on the other hand, is insidious in its onset, chronic throughout, and may not cause much disability for several years. While it often begins in one or two joints only, one joint after another usually becomes involved until nearly all the movable joints of the body are affected. The simultaneous presence of joints in different stages of involvement often gives the key to the right diagnosis. In chronic articular rheumatism are found the final results of an acute and subacute inflammation of the synovial membrane, with

little involvement of the extra-articular structures. In arthritis deformans the cartilages and extra-articular structures are especially involved, causing contractures and permanent fixation of the joints. In the terminal phalanges there are often contractures of hyperextension, a condition which the author has never seen in chronic articular rheumatism. In the latter affection, moreover, all the fingers are in slight abduction and flexion, the joints are flaccid, the capsular ligaments longer and looser than normal, there is no bony ankylosis, and the deposits found are within the synovial membrane. The history of development, the characteristic deformity and the therapeutic test make a differential diagnosis possible in practically every case.

In the author's opinion, arthritis deformans is the result of long-continued auto-intoxication. The joint process itself is thus a chemical, not a microbic, process. There is, to begin with, some factor which causes articular and periarticular irritation. This in turn causes more or less constant pain, which results in malnutrition and loss of resistance. A vicious circle is soon established, one factor causing the next until the patient finally becomes so exhausted as to be a bedridden cripple and an easy prey to intercurrent infection. In treating the condition, early recognition of the cause and its removal form the chief ends to be sought. In many cases the progress of the disease can be stopped by removal of offending appendices, hæmorrhoids, and other causes of irritation. In advanced cases, however, where the original cause has ceased to be operative or in which the primary lesion cannot be located, the most effective method of treatment available consists in relieving the pain, thus breaking in on the vicious circle and thereby securing a return to good nutri-

tion. This is best accomplished by natural means—not by opium or coal-tar derivatives, which make the condition worse. The relief of pain in an inflamed joint, the author finds, involves the recognition of two distinct principles: First, an absolutely rigid close-fitting retention dressing; second, the application of this dressing with the limb in such a position that the antagonistic muscles surrounding the joint are in absolute equilibrium. Under these conditions, pain in any chronically inflamed joint will cease from within a few hours to a week. If the limbs in arthritis deformans cannot be brought into the desired position without extreme pain, the contractures are broken up under anæsthesia, the tendons lengthened, if necessary, by tendoplasty, the limbs placed in plaster-of-Paris dressings in the desired position, and allowed to remain there until pain and irritation have subsided, or the wound healed. A new plaster mold reinforced with basket splints and wheat gluten bandages is then applied over stockinet. In immobilizing the upper extremity a small pad is placed in the axilla, a shoulder-cap applied and fastened to the chest with roller bandage; the elbow is placed at a little less than a right angle, the forearm rotated inward slightly, the thumb extended, the fingers held perfectly straight and a mold applied in this position. To immobilize the hip the author uses a plaster-of-Paris spica extending from the umbilicus to the pubis and to within an inch of the knee, with the thigh abducted 10° and ventral flexion of 5° . The knee is placed at 175° and the ankle at 85° . If the above treatment is instituted early, if the cause can be found and removed, the usual condition of utter helplessness into which these patients fall can often be prevented. In the treat-

ment of intermediary cases, *i.e.*, where the cause can no longer be found but the patient is not yet helpless, it is well, for the present, to be rather cautious. In bedridden cases, however, much can be done by this method; the patient can be relieved of all pain, much of the deformity and malnutrition, and can often be rendered self-supporting. The author describes two cases in which marked success was obtained. E. H. Ochsner (*Journal of the American Medical Association*, March 5, 1910).

BRAIN TUMOR.

It is a truth always to be emphasized that, in order to be successful, operation in cases of brain tumor must be done early. A necessity for moderate delay for observation and antisiphilitic treatment is not to be ignored, but the delay must not be too long. It is well to remember that in glioma the symptoms may be decidedly lessened by the administration of an iodide. The Wassermann reaction is an important aid to diagnosis, but we must not forget that a syphilitic person may have a non-syphilitic tumor. Especially serious is the delaying of decompression when papilledema is developing rapidly, as it may in tumor of the pons or cerebellum, even in rare cases reaching a high degree within a few days. As tumors of the pons often exist for a long time without causing papilledema, and then suddenly may give rise to rapid swelling of the optic discs, the danger of being caught off one's guard is by no means imaginary. The author is not in sympathy, however, with the teaching that when there is any doubt as to the existence of a brain tumor decompression should be performed, and the antisiphilitic treatment carried out later. Decompression is indicated where grave symptoms of increased intracranial pres-

sure exist, but if the symptoms do not call for immediate decompression, it is preferable that the antisiphilitic treatment should precede. Decompression is a trauma of the head, and when mental failure has begun, it may be intensified by the operation. In some instances, again, decompression does not benefit the patient. W. G. Spiller (*Journal of the American Medical Association*, February 19, 1910).

COLLAPSED CYSTS AND HERNIAL SACS, REMOVAL OF.

In operating on cysts, it is important to remove the sac entire to effect a permanent cure. It is not difficult to follow its outlines when it is filled, but frequently the cyst-wall is so thin that rupture takes place and the contents escape, when it becomes difficult to differentiate the cyst-wall from surrounding tissues. In such cases the author makes use of strips of gauze packing to distend and bring out the outline of the sac. This plan is also employed with advantage in the isolation and separation of hernial sacs when adherent or congenital, especially if the sac be thin and ill-defined. Separation of the sac from the cord was found to be greatly facilitated. The method may be used in the removal of vulvo-vaginal, broad ligament, pancreatic cysts, etc., and is further advantageous in that bruising and tearing of the surrounding tissues is minimized. A. J. Schoenberg (*Surgery, Gynecology and Obstetrics*, March, 1910).

DIABETIC GANGRENE, TREATMENT OF.

Amputation, the sole effective measure hitherto available in dealing with cases of diabetic gangrene due to obliteration of the arterial supply, is itself attended with danger, the organism already being placed in jeopardy because of the absorp-

tion of toxins. The author found that by employing currents of air heated to 150°, 300°, 500° C. or even higher, extension of the gangrene and toxic absorption could both be arrested. On repeated use, such currents produce carbonization of the part and limit the gangrenous process by keeping the tissues dry. Extension of the process and infection having been checked, amputation can with safety be performed and the patient rid of the necrosed segment of limb. Marked success was obtained in the cases thus treated. Dieulafoy (*Bulletin médical*, February 16, 1910).

EXOPHTHALMIC GOITRE AND THYROID TUMORS, POST-OPERATIVE RESULTS IN.

The author reports upon the results obtained in a series of 278 operations on the thyroid. 1. Malignant tumors. Fifteen cases were operated, and all died, either from the operation or from recurrence. Cancer of the thyroid is at present rarely if ever diagnosed in its curable stage. 2. Benign tumors and plain goitres. There was one fatality. In a number of the simple goitres moderate enlargement of the remaining goitre tissue took place. In two cases a second operation was required. All of the benign tumors remained cured. Deformities resulting from operation—scars and asymmetry of the neck—were, as a rule, wholly negligible. The asymmetry, due to the necessary inequality of the amount of gland on the two sides, may be increased by growth of the remaining side; but in many cases the asymmetry present after operation diminishes, owing to readjustment of the trachea and larynx. As to function, a certain amount of hoarseness may continue for several weeks or months; on the other hand, in many cases the voice was

greatly improved. 3. Graves's disease. Seventy-two cases were operated. The author concludes that the results in these cases are at present incapable of anything like an accurate statistical treatment, though certain reliable general statements can be made. The heart usually responds by a diminished rate, lessened excitability and an improvement in the myocardium. In early acute cases these symptoms promptly disappear. In prolonged cases the damage to the myocardium may never be wholly repaired; an intermittent tachycardia not infrequently persists for several years. Cardiac relapses are common, especially in the first six months. The vasomotor phenomena quickly change, but some peripheral dilatation may persist for a year or more. Exophthalmos may subside promptly, or very slowly, or asymmetrically, or indeed not at all. Gastrointestinal symptoms disappear rather promptly. The sexual function may be relieved early or late; menstrual disorders are the last to disappear. The skin soon loses its excessive moisture, but the eruptions may continue many months. Muscular power returns gradually. Almost every patient shows prompt gain in weight. Intellectual power also improves early, along with the general symptoms. The greatest relief of all—and one that appears as soon as the immediate operative effects pass away—is the disappearance of the morbid psychic state; depression and melancholy are supplanted by hope and buoyancy. Relapses are not infrequent during the period of readjustment. The longer the disease has existed, the greater the organic changes and the more tardy the final convalescence. Where organic changes have progressed to a certain degree, the operative risk is greatly increased, and indeed may render operation impossible. The author has

seen no case that was not benefited by operation. The majority of patients regard themselves as cured. G. W. Crile (*Lancet-Clinic*, February 5, 1910).

EXTRA-UTERINE PREGNANCY, TREATMENT OF.

Operation for the removal of the gestation sac is indicated in the first half of an extra-uterine pregnancy wherever conditions permit, since at this period the mother is in great danger from rupture and sepsis, and the chances of survival of the foetus are poor. During the latter part of an extra-uterine gestation, however, the chances of rupture and fatal hæmorrhage are much less (4.8 per cent.) and the chances of survival of the foetus are much greater. Though malnutrition and malformation of the extra-uterine child are more common than under normal conditions, they are not frequent enough to contra-indicate attempt at saving its life. Hence, under favorable surroundings, when the patient can be watched, she should be allowed to go within two or three weeks of term before operation. Since the maternal mortality is more than twice as great after operation in advanced extra-uterine pregnancy where the placenta is left behind, its removal should be one of the cardinal principles of each operation. In the discoid variety of placenta, where only a small surface of the organ is not attached, the blood-supply must be controlled either by tying the vessels or by compression of the aorta before an attempt is made to remove the placenta. When, for any reason, such removal is impossible, the placenta should be shut off from the peritoneal cavity by gauze. Dependent drainage through the vagina should be secured whenever possible. R. Peterson (*Transactions of Southern*

Surg. and Gyn. Assoc.; *Boston Medical and Surgical Journal*, Feb. 17, 1910).

FIBROIDS, SUBMUCOUS.

The submucous fibroid, clinically, may be considered a malignant growth. Aside from the chronic irritation produced, and the consequent malignant degeneration of the tumor itself, it is often an unrecognized cause of profound anæmia, with accompanying disorders of the heart, blood-vessels and kidneys. It commonly occurs in combination with one or both of the intramural and serous types, and is then easily diagnosed, but when it occurs alone, is usually not discovered until late. It causes more pain than either of the other types, especially at the menstrual period, when the uterus forcibly contracts. Dysmenorrhœa with any excess in loss of blood in a woman of thirty years or over should lead one to observe carefully for the presence of a submucous fibroid. The symptomatology is of the utmost importance in the diagnosis. In a typical case there is gradually increasing menorrhagia and dysmenorrhœa, with consequent anæmia and debility. The patient usually seeks advice for the secondary anæmia and so-called nervous debility, and unless the history is fully taken, the abnormal menstruation may not be mentioned. This is especially true if the patient is approaching the menopause. Although the amount of blood loss usually increases with the development of the tumor, this is no criterion by which one may be guided. In the differential diagnosis, enlargement of the uterus from subinvolution, metritis, endometritis, and pregnancy, should be considered.

In 44 cases in which the author has operated for fibromyomata, the submucous tumor was found alone in 6 cases, and accompanied by one or both of the

other forms in 18 cases. The operation employed was supravaginal hysterectomy with implantation of the round ligaments into the stump of the cervix and conservation of any healthy adnexa. In 40 consecutive cases there were no deaths. When the submucous fibroid is of large size and sessile, hysterectomy is the operation of safety. The vaginal operation seems limited to the removal of polypi, owing to the marked importance of exploration of other structures in the pelvis and abdominal cavity in the presence of a submucous tumor of any size. Transperitoneal enucleation of these tumors involves a slight increase in the operative risk and the possibility of malignant degeneration of the tumor. In certain cases the choice of operation may be left with the patient. If she be willing to accept these added risks, in order to preserve her uterus, the surgeon should act accordingly. P. E. Truesdale (Boston Medical and Surgical Journal, March 10, 1910).

FRACTURE OF FEMUR, IMPROVED METHOD OF TREATMENT IN.

The disadvantages of Buck's extension include the relative fixation of the limb to the bed, with consequent immobilization of the body, and the lack of efficient lateral control of the broken ends of the fragments. For three years the author has been employing a combination of the weight and pulley system and suspension by the Hodgen splint, with very satisfactory results. By this method the traction can be accurately measured and maintained, transverse displacement corrected, and the patient's comfort vastly increased. For the Hodgen splint of the shops a substitute can be made of a stout iron rod bent to the shape of an elongated U, the arms of which are nearly as long as the limb; each arm should be slightly bent to correspond

with the flexion at the knee-joint. The limb is supported between the arms of the splint by five or six doubled pieces of roller bandage, the ends of which are fastened in such wise that they can readily be tightened or loosened. The splint, in turn, is supported by two cords, one attached to each side-bar above and below, each cord being about half as long again as the distance between its attachments. A single cord for suspension is tied about the bights of the others and attached to a stout hook in the ceiling, or to any other improvised fixed point, preferably 3 or 4 feet above the bed. After applying the Buck's extension, with the wheel over which the weight-bearing cord passes placed 18 inches from the sole of the foot in order to avoid notable disturbance of the line of traction by lateral shifts of the patient, the supporting bands attached to the splint are passed under the leg and thigh, the limb raised to swing clear of the bed, and the bands then adjusted as may be needed for the patient's comfort or to make the support uniform. After the full effect of the traction has been obtained, coaptative pressure on the fragments can be obtained by tightening or slackening one or the other of the bands supporting the thigh, thereby moving the affected ends in an anteroposterior direction; to move them laterally, two bands attached one to each side-bar and tightened to make lateral pressure in opposite directions upon the two broken ends are used, the upper ends of the side-bars being held apart by a hoop-spreader. L. A. Stimson (Journal of the American Medical Association, February 5, 1910).

GANGRENE DUE TO SYPHILITIC ENDARTERITIS.

Lesions in the blood-vessels in the secondary period of syphilis are the result of a hyperplastic inflammatory proc-

ess, and in the tertiary period represent a true gummatous infiltration. It is now clear that the spirochætae, circulating free in the vessels, attack the epithelial lining of the blood, causing alterations in them. Several observers have found spirochætae in large colonies in the vascular tunics. The organisms have also been detected in the superficial network of inflamed capillaries. In the arteries the adventitia is scarcely distinguishable from the other tunics, the media appears smaller and compressed, while the intima is thickened, and interwoven with hyperplastic young cellular elements concentrically disposed. The lumen of the artery is diminished and altered in shape; often it is occluded by a thrombus. According to the vessels involved three forms of gangrene may be produced: 1. *En masse*, when the principal artery of a limb is occluded, oftenest due to endarteritis in the late stage of syphilis. 2. Superficial, the result of an acute endoangioitis in the small arteries supplying an area of skin. 3. In the center of deep syphilitic lesions, due to pressure of the infiltrating elements on the blood-vessels and tissues. The author reports three cases, representative of the above groups. In the first, gangrene began in the toes and spread upward to the whole foot, malleoli and knee. On amputating at the thigh, the femoral artery was found rigid and occluded by a thrombus. The gangrene continued and death occurred from sepsis. The second case presented a superficial gangrenous condition of the external region of the whole left thigh, extending to the upper third of the leg. Sloughing took place after a few days of local treatment (continuous baths of 1:10,000 bichloride of mercury), and the area gradually healed. In the third case, a gumma of the lower lip developed into an extensive gangren-

ous mass, further progress of which was arrested by deep injections of 1 per cent. bichloride of mercury solution, large doses of potassium iodide, and locally a moist dressing of 1:5000 bichloride. The surface healed, leaving a bad scar, which was corrected by a plastic operation. Heroic antisyphilitic treatment is recommended in these cases by the author, the gangrenous process having been checked thereby in several instances. Especially when the syphilitic process has acted on the small vessels can limitation of the gangrene be obtained. In all the cases tonic treatment, particularly quinine in large doses, was found of great value in subduing septic conditions. A. Ravogli (Lancet-Clinic, Feb. 12, 1910).

GASTROJEJUNAL ULCERS.

The total number of operations performed upon the stomach and duodenum by C. H. and W. J. Mayo up to December 31, 1909, was 1775, of which 1141 were gastrojejunostomies. Of the whole number, as far as any knowledge could be obtained, not a single case developed true jejunal ulcer. Acid gastric secretions diverted into the jejunum, in connection with lowered resistance, may undoubtedly cause peptic ulcer, but we should remember that the jejunum is constantly bathed in the alkaline pancreatic and biliary secretions and is therefore much better protected than the stomach and upper duodenum where peptic ulcers ordinarily appear. In the above series three cases were encountered, however, of the gastrojejunal or pseudo-jejunal type of ulcer, which the author views as due, in general, to technical failures in the operation itself rather than an unavoidable condition such as true jejunal ulcer now appears to be. Brief histories of the three cases are given. In the first case the ulceration

was found to be due to a retained Murphy button, which had caused a sudden attack of abdominal distress simulating appendicitis three years and nine months after the primary operation of anterior gastrojejunostomy for pyloric obstruction. The ulcer had perforated the stomach above and to the right of the gastrojejunostomy opening. It was excised and a plastic operation done over a Robson bone bobbin, the patient recovering. The second case resulted from retention of infected suture material, upon removal of which, together with pylorotomy, rapid recovery took place. The third case was due to an infected hæmatoma in the suture line of a posterior gastrojejunostomy, formed by the accidental pricking of a vein in the transverse mesocolon. Two and a half years after the first operation, intervention became necessary, an ulcer $1\frac{1}{2}$ centimeters in diameter being found in the line of the gastrojejunostomy opening extending into the mesocolon at the point of the former hæmatoma. The opening and the ulcer were completely excised, the gastric and jejunal openings closed, and a Finney gastroduodenostomy performed. The excised gastrojejunal ulcer proved to be a cavity in the fatty tissue, neither stomach nor intestinal tissue being present in its floor. W. J. Mayo (Surgery, Gynecology and Obstetrics, March, 1910).

HÆMOPHILIA, TREATMENT OF.

Tonics and a liberal diet with good hygienic surroundings seem the best treatment for the dyscrasia. Styptics, such as ergot, lead acetate and silver nitrate, are without effect. Calcium lactate exerts a beneficial effect, but only for a short while, after which the coagulation time again lengthens. The quantity given must then be greatly increased, or

the drug may be left off for a few days, after which its administration will again shorten the period. In local hæmorrhages the best results are obtained by using sterilized gelatin or adrenalin compresses or simple pressure. Sterilized solutions of gelatin injected subcutaneously have also proved efficacious. During pregnancy in hæmophilic women any indication of hæmorrhage warrants the induction of labor, but if the patient will not consent to this, general tonic treatment and calcium lactate given a day or so before the expected confinement will probably give the best results. Hæmophilic joints should be treated with pressure and absolute rest. If hæmorrhage produces great tension, paracentesis of the joint followed by the injection of a solution of adrenalin chloride is advised. This, however, should be the extent of operative interference, cases of fatal hæmorrhage being on record from opening hæmophilic joints, in which the condition had been mistaken for tuberculosis. Massage, cautiously begun a few days after the development of the effusion, not over the joint itself, but over parts slightly distant, has been recommended, the procedure having as its object both stimulation and prevention of muscular atrophy. After much thickening of the joint capsule has developed, massage with very gentle passive motion is indicated. For subluxation suitable braces are to be employed. In hæmophilic hæmaturia, the ordinary styptics have little or no effect. Where the general hygienic and tonic treatment has been unavailing, nephrotomy has been performed in some cases with curative results, nephrectomy, however, is not indicated.

The author reports a case of typhoid fever occurring in a hæmophilic subject. The principal manifestation of the

hæmorrhagic tendency had been attacks of epistaxis during childhood, so severe at times as to cause fainting. Later the attacks grew less severe, though but slightly less frequent. The case is unusual in that the inheritance came through the father, who was himself a bleeder. The patient was forty years of age when taken with typhoid fever. The usual premonitory symptoms appeared, except in that epistaxis occurred almost daily. The coagulation time when first taken was 18 minutes, the normal limits with the Boggs instrument being 6 to 8 minutes. By giving calcium lactate the time could be reduced to nearly normal by the end of the third or fourth day, after which it would begin to lengthen. The drug was therefore administered for 3 days or until the time began to lengthen; it was then discontinued until the time reached 12 minutes, when it was resumed. In this way the time was always kept within 12 minutes, and often down to 7 or 8 minutes. No hæmorrhages occurred from the intestinal lesions, and the case recovered. The author ascribes the successful termination to an abatement of the hæmorrhagic tendency at or about the age of forty. C. W. Larned (*American Journal of the Medical Sciences*, March, 1910).

HYPERACIDITY OF THE URINE AND ALBUMINURIA.

The degree of urinary acidity and the amount of albumin passed may not infrequently be observed to undergo corresponding fluctuations. The alkaline salts seem to produce a favorable effect in certain cases of nephritic albuminuria associated with high acidity. Believing that the albuminuria in such cases might in some way be dependent upon the hyperacidity, the author experimentally administered phosphoric acid, and found that

the albumin and also the casts were thereby increased; large doses of sodium bicarbonate, on the other hand, brought about a reduction. He concludes that diminution of the urinary acidity is favorable to renal function, and suggests that in all cases of albuminuria the degree of acidity be ascertained and the reaction of the urine altered by means of alkaline remedies. Von Hoesslin (*Progrès médical*, December 18, 1909; *Revue de thérapeutique*, February 1, 1910).

ILEUS, ATROPINE IN.

Atropine was found to be of value in eight cases of paralytic ileus. In two patients, already in extremis, it was of no avail. It is best administered by hypodermic injection, the first dose being 1 milligram ($\frac{1}{64}$ grain) followed shortly after by a stronger dose of 3 to 5 milligrams ($\frac{1}{22}$ to $\frac{1}{13}$ grain). Improvement generally began within 10 hours after administration, and was marked by an abundant fæcal discharge containing much unaltered food-material. Toxic phenomena occurred in two instances but were never alarming and disappeared within 24 to 48 hours. A. Lederer (*Medizinische Klinik*, January 2, 1910).

MENINGEAL HÆMORRHAGE, LUMBAR PUNCTURE IN.

Meningeal hæmorrhage of non-surgical origin should be treated by lumbar puncture in the same manner as meningeal hæmorrhage associated with fracture of the skull. In support of this contention the following case is related: A man 45 years of age, after a short period of headache, suddenly became unconscious. The temperature later rose to 104° F. and symptoms strongly suggestive of cerebrospinal meningitis appeared. Puncture yielded 40 cubic centimeters of bloody fluid containing in addition to the ery-

throcytes numerous polymorphonuclear leucocytes, but no pus corpuscles or meningococci. The precipitin reaction was also negative. After withdrawal of the fluid 30 cubic centimeters of Dopter's serum was injected. The patient's condition grew progressively worse, but no paralysis appeared. A second lumbar puncture giving the same result as before, a diagnosis of pachymeningitis with meningeal hæmorrhage was agreed upon. The symptoms then began to improve. Five more lumbar punctures were subsequently practised, and recovery followed in two months, the condition leaving no unpleasant sequelæ. Tézénas, Choupin and Martin (*La Loire médicale*, December 15, 1909).

PEMPHIGUS, TREATMENT OF.

Arsenic, strychnine, atropine and quinine have been recommended as giving the best results in this obstinate condition. Quinine in large doses was used by the author in two severe cases with pronounced benefit. The first patient had high fever and in addition to large bullæ on the cutaneous surfaces showed conjunctival lesions. She was given 1.5 grams (23 grains) of quinine daily for two weeks, then 2.0 grams (31 grains) daily. No tinnitus, vertigo or vomiting resulted, and the vesicles which appeared in the course of the treatment were of small size. The second case also showed marked general improvement under quinine. Lesions in the genital region completely disappeared, and the patient was able to sleep. In prolonged, rebellious cases of this disease the author advises the use of quinine in large doses, with intermissions if necessary. R. Bergrath (*Münchener med. Wochenschr.*, January 4, 1910).

PENTOSURIA, ESSENTIAL.

Three varieties of pentosuria have been recognized: 1. Alimentary pentosuria, following the ingestion of food rich in pentose-producing substances. 2. Complicating pentosuria, in which the urine contains both hexose (dextrose) and pentose in small amount, the cases being actually diabetes mellitus. 3. Essential pentosuria, in which the excretion of pentose is persistent, independent of diet, and not associated with diabetes mellitus, though occasionally dextrose has been observed to appear transiently and in minute quantities. In contrast to saccharine diabetes, pentosuria is essentially a mild condition. It is unaccompanied with polyuria, polydipsia, bulimia, emaciation or obesity, and does not appear to be attended with special liability to pyogenic and other infections or with the risk of acid intoxication. Nothing is known of any association with definite tissue changes or circulatory disturbances. No light is thrown upon the metabolic fault concerned by the habits, age, sex, vocation, nationality, or social and climatic environments of the patients. There seems to be some indication of a family tendency. Pentosuria can hardly be attributed to failure in elimination of foodstuffs, since it persists when the patients are put upon a milk diet and rarely seems to be increased notably, even by a diet of pancreas or pears, which are rich in pentose-yielding bodies. Nor can it reasonably be supposed to result from the breaking up of the pentose-proteid combinations of the body tissues, since the average daily excretion in cases thus far observed has been from 5 to 20 grams of pentose, whereas the entire body contains but about 10 grams. The diagnosis of essential pentosuria is established by the persistence of the pentose excretion and the

absence of other symptoms. Pentoses in the urine are recognized by certain distinctive reactions. They behave much like dextrose in the bismuth test of Boettger, but the reduction to metallic bismuth is usually incomplete and the precipitate brown or gray rather than black. With Fehling's solution they produce somewhat suddenly, after some minutes' boiling, a heavy greenish or yellowish or orange-colored precipitate, instead of the red or salmon-colored oxide which is developed gradually in the presence of diabetic sugar. They do not ferment with yeast and their bacterial decomposition is not attended with the evolution of gas. Such findings as these, especially if the polariscope shows the substance to be optically inactive, should direct attention to the possible presence of a pentose. Diabetes mellitus is thus excluded, but other chemical tests must be made before the identity of the body can be thoroughly established. The crucial test is the recognition of the melting-point of the pentosazone crystals produced by the action of phenylhydrazin (156° - 160° C.). Pentosuria is apparently an intractable condition, but causes very little inconvenience. About the worst thing that can happen is to mistake the condition for glycosuria and restrict the patient's diet accordingly. This is very likely to cause loss of strength and flesh. When, however, the true nature of the case is recognized and a diet suited to the individual conditions instituted, the patient rapidly recovers from this loss and appears entirely normal except for the urinary findings. The only medication which, from report, seems to influence the condition favorably, is arsenic. There is as yet no instance on record of the transformation of pentosuria into diabetes. The history of a personal case is given, in which no significant ailment

of any kind has been present, though a small amount of dextrose has at times been found in conjunction with the pentose in the urine. S. Solis Cohen (*American Journal of the Medical Sciences*, March, 1910).

POLIOMYELITIS, EPIDEMIC, MODE OF INFECTION IN.

The authors studied the nasopharyngeal mucous membrane in monkeys with reference to the virus of poliomyelitis. The mucosa of these parts, in monkeys recently paralyzed, was excised, rubbed up with quartz sand, pressed through a bacteria-tight filter, and injected into the brain of monkeys. By using this method it was found possible to produce paralysis, thus proving that the mucous membrane contained the virus of poliomyelitis. Injection of the virus into the spinal canal by lumbar puncture likewise set up the disease and caused the characteristic paralysis. The cerebrospinal fluid removed from monkeys at the onset of paralysis was found to be altered, containing an excess of proteid and lymphocytes, and coagulating spontaneously. Paralysis also followed inoculation of this fluid into the brain. The experimental results show that a path of elimination of the virus of poliomyelitis exists by way of the nasopharyngeal mucosa and indicate that the same path may be traversed in the course of infection. Hence it would seem desirable, at the present state of our knowledge, to deal prophylactically with epidemic poliomyelitis, as with epidemic cerebrospinal meningitis, by disinfecting and destroying the secretions of the nasal and buccal cavities. S. Flexner and P. A. Lewis (*Journal of the American Medical Association*, February 12, 1910).

POTASSIUM PERMANGANATE AS A CAUTERIZING AGENT.

The author has employed powdered permanganate of potassium as a caustic in dealing with various kinds of cutaneous outgrowths and ulcerations, including benign and malignant neoplasms, lupus, keloids, chancroids, cavernous angiomas, etc. The healthy skin surrounding the tumor or ulcer is protected by a series of about fifteen rings of ordinary adhesive plaster piled one over the other, the central opening in each having first been cut out slightly larger than, though corresponding in shape with, the area to be cauterized. The powdered permanganate is poured into the central depression thus formed, and a covering layer of unperforated adhesive applied. At the expiration of 48 hours, the growth will be found to have disappeared, a softened mass alone remaining, upon removing which a crater-like depression lined with blackish masses of manganese dioxide is seen. The surrounding narrow border of healthy tissue previously left uncovered by adhesive is also eaten away, and the margins of the depression are sharply defined. No inflammatory areola will be present. The procedure is usually painless. The area undergoes rapid healing, and the resulting scar is soft and shows no tendency to hypertrophic changes. This form of cauterization, the author claims, gives results substantially equal to those obtained by excision, with the added advantage of freedom from hæmorrhage. The author has also used powdered permanganate in the treatment of tuberculous sinuses. He introduces a small tube into the channel and pours in the powder as the tube is being withdrawn. This procedure is sometimes quite painful, though the pain generally disappears in an hour. Permanent cure was obtained in 10 per

cent. of cases of this type. The method is contra-indicated in recent sinuses with much discharge, sinuses in close relation to vessels or nerves, and sinuses leading from migratory abscesses due to spinal caries. J. Finck (*Münchener medizinische Wochenschrift*, No. 4, 1910).

PYLORIC SPASM OF INFANTS, TREATMENT OF.

Good results were obtained in this condition by the use of rectal instillations of Ringer's fluid, the formula of which is as follows: sodium chloride, 7.5 grams (2 drams); potassium chloride, 0.42 grams (7 grains); calcium chloride, 0.24 grams (4 grains); boiled water, 1 liter (34 fluidounces). The solution is introduced high up into the bowel through an ordinary soft rubber syringe provided with a soft nozzle and a cock by which the flow may be regulated. The fluid should enter the bowel at the rate of 30 to 40 drops a minute. The instillation is continued for two hours, the total amount of fluid being thus about 500 cubic centimeters (17 fluidounces). This procedure is repeated morning and evening for a number of days or weeks, as required. Not only was the loss of water from the tissues owing to vomiting compensated for, the infants showing a prompt gain in weight, but the pyloric spasm also seemed to be influenced, and vomiting ceased after a few days' treatment. Rosenstern (*Deut. med. Wochenschr.*, January 6, 1910).

RENAL AND URETERAL CALCULI.

Renal stones, like gall-stones, are most probably formed as the result of a low-grade infectious process. The germs producing this infection, moreover, are probably colon and typhoid bacilli. Calculi may exist latent in the kidneys, giving rise to no symptoms, though not as

commonly as with gall-stones. They cause symptoms in two ways especially: by favoring infection, and by obstructing the ureter. Large stones seldom produce symptoms in a mechanical way, but usually by favoring infection, which gives rise to a more or less constant dull pain, or to an acute attack of colic due to obstruction of the ureter by pus and blood or by swelling of its mucosa. The passage of a stone through the ureter does not necessarily cause pain; it is the greatly increased intrarenal tension due to plugging of the ureter which produces renal colic. In support of this contention the author cites a case of complete anuria in which drainage of the sole remaining kidney (the other having been previously removed for tuberculosis) procured immediate relief of pain, and X-ray examination the next day showed a stone in the upper ureter the size of a coffee-bean, which was later passed per urethram without having caused any pain whatever. Other similar cases were also observed. Among the atypical cases which came under the author's care were cases simulating appendicitis, gall-stones, ileus, and stomach trouble. A clinical diagnosis can usually be made where there is a history of ureteral colic, combined with hæmaturia or pyuria or both. With very few exceptions, however, the X-ray can be relied on to show stones as large as a bean, the percentage of error, with good technique being less than 5 per cent. In some cases doubt may arise as to whether a shadow, apparently along the course of the ureter, is due to a ureteral stone or to some shadow-producing structure outside of the ureter, such as a calcified lymph-gland, phlebolith in a pelvic vein, ossification of the pelvic ligaments, etc. To avoid error in these cases, a skiagraph ureteral catheter should be introduced into the ureter on

the suspected side, and a second X-ray exposure made, taking two views of the patient, one in the anteroposterior direction and one with the patient slightly inclined to one side. We can thus positively determine whether the shadow is due to a stone in the ureter or not. In the kidney region there are seldom any localized deposits or other pathologic conditions casting definite shadows, other than renal stones, biliary stones being almost uniformly transparent. The contour of the ribs, however, should always be examined; otherwise small stones projected on the rib might be overlooked. It is to be remembered, too, that there is often a tendency to interpret mass shadows in the kidney region and well-formed fæcal shadows in the pelvis as soft stones.

After the diagnosis has been made, there are but two contra-indications to operation: advanced age or serious organic disease, and very small stones in the ureter that can reasonably be expected to pass. To aid in the passage of the stone local anæsthetics, such as sterile solutions of cocain, eucain or alypin, or lubricants, such as sterile olive oil, almond oil, or petrolatum, may be applied to the ureter in front of the stone through the ureteral catheter. Pyelotomy is the operation of choice where there are small stones in the pelvis or a fair-sized one limited to the pelvis. Nephrolithotomy is the operation required for multiple stones, stones in the upper or lower pelvis, stones in the calyces, branched stones, or stones with gross infection. The one objection to this operation is the occasional occurrence of serious hæmorrhage. Nephrectomy is the operation to be considered for badly diseased kidneys in which removal of the stone would leave the patient with a suppurating urinary fistula. The

author's results have improved since he has recognized the necessity of a primary nephrectomy in such cases. In deciding for or against removal in a given case, he relies on: 1. Cystoscopic examination with catheterization of the ureters to determine the presence of both kidneys. 2. Estimation of the urinary output and total solids for several 24-hour periods. 3. The gross appearance of the cross-section of the diseased kidney, as seen at operation. He cautions against the use of nitrous oxide anæsthesia in cases with heart disease, in which he considers it less safe than ether. With patients in poor condition but having good heart-action, he often uses nitrous oxide in preference to ether. In over 50 cases of pyelotomy and nephrolithotomy, one death was recorded; two patients died, however, after secondary nephrectomies, both made difficult by the necessity of digging out the kidney remnant from dense scar-tissue. A. D. Bevan (*Journal of the American Medical Association*, February 26, 1910).

SEPTICÆMIA, COLLARGOL IN.

The author gives a critical review of the results obtained with collargol in 45 cases treated at Professor Amann's clinic in Munich. A large variety of septic conditions was represented in the series. Of the four modes of administration—by inunction, per rectum, intravenously and per os—the author recommends only the gradual intravenous injection of 1 or 2 cubic centimeters of 5 to 10 per cent. suspensions. The remedy proved valuable in cases of septicæmia and pyæmia of medium gravity, as well as in obstinate febrile states due to reabsorption of toxins and associated with anæmia. In cases where in spite of local treatment and apparent limitation of the infective process persistent high temperature and

pulse indicated the presence of a deep-seated involvement of the tissues and increasing toxæmia, the reaction produced by this agent was particularly prompt and marked. The author believes that collargol should be administered in all cases of puerperal infection, both on account of the impossibility of gauging the gravity of the infection at the outset and because of the prompt reduction of temperature and general improvement which the remedy brings about. In very severe bacteriæmic conditions, septic peritonitis, exudative parametritis and virulent localized suppurations, collargol did not prove of value. It is beneficial, however, when used locally in acute cystitis and pyelitis, and has been shown to be entirely innocuous. It cannot be said to exert any antibacterial action, and its leucocytogenetic properties are questionable. The author believes that it acts as a catalytic, accelerating oxidation and thereby mitigating toxic effects. It is readily absorbed. H. Albrecht (*Münchener med. Wochenschr.*, Dec. 21, 1909).

SEROUS EFFUSIONS, GALVANIC CURRENT IN.

The pain and possible ulceration caused at the point of application of the electrodes have hitherto constituted a serious objection to the use of strong galvanic currents. The author, who has for several years treated all effusions in serous cavities with this form of electricity, avoids the above effects by using as the positive electrode a broad wad of cotton soaked in 10 per cent. sodium bicarbonate solution and as negative electrode a similar wad soaked in 5 per cent. tartaric acid. In cases of peritoneal effusion the anode is placed over the abdomen and the cathode over the spinal column; in pleural effusion the anode is placed over the affected area and the

cathode on the posterior thoracic wall; in serous pericarditis the anode is over the precordium and the cathode over an indifferent area. The treatment is given daily, the applications lasting one hour, with a current of 15 or 20 milliamperes, gradually and very cautiously increased up to 50 or 60. In many cases of peritoneal, pleuritic and even pericardial effusion, prompt and complete re-absorption of the fluid was obtained. De Renzi (*Nuova Rivista clinico-terapeutica*, January, 1910).

SHOULDER DISLOCATIONS, REDUCTION OF.

The author has for the last twenty years successfully reduced all his cases of shoulder luxation by the use of a modification of Kocher's well-known method. The latter procedure is carried out in four steps: 1. Flex the forearm to a right angle, with the elbow pressed against the side of the body. 2. Carry the hand outward, causing external rotation of the humeral head. 3. Maintaining the hand in this position, move the elbow forward, inward and upward. 4. Carry the hand rapidly toward the sound shoulder. The author dispenses entirely with the fourth step, stating that if proper gentleness and deliberation be used, the head of the humerus returns to its normal position in the glenoid cavity while the third movement is being performed. This movement should be carried out slowly, and brought to a stop at the point when maximal resistance is offered. After a moment's delay a slight jolt is felt, which signifies that the head of the humerus has re-entered the glenoid fossa. An essential part of the procedure consists in manipulating gently, in order to avoid causing pain and consequent firm contraction of the muscles governing the joint. The patient should

preferably be kept ignorant of the fact that reduction is about to be performed, voluntary resistance being thereby eliminated. It is of interest to note that purposeful dislocation of an opponent's shoulder according to the Japanese system of self-defence (*jiu-jitsu*) is produced by forcing the arm to execute movements the reverse of the first three steps of Kocher's method. The fourth movement has no place in the procedure, and is thus again shown to be unessential. M. G. Gallois (*Bulletin médical*, December 11, 1909).

SYPHILIS, EARLY DIAGNOSIS OF.

All the staining methods for demonstrating the presence of the *treponema pallidum* have gradually been given up by practitioners as a means of early diagnosis, since the results obtained hardly compensate for the time and trouble expended. The serum diagnosis introduced by Wassermann has been shown to be a test of extreme value, but unfortunately the complement-fixing antibody does not become developed till the primary sore has been present for over a month. The author obtained negative results during the first month in 50 per cent. of cases which later proved to be syphilitic. In cases where it is desired to determine whether a sore which has just appeared is syphilitic or not, therefore, this reaction is not of much assistance. The paraboloidal immersion condenser and the reflecting immersion condenser, popularly called the "ultra microscope," gives us a simple, rapid and certain method for demonstrating the living *treponema* in scrapings from a suspected sore or papule. On the under surface of the condenser is painted a disc of black enamel by which all rays of light from the microscope mirror are cut off except those at the periphery of

the condenser. By suitably cut lenses the latter are deflected so as to converge obliquely on the object examined, which appears as a bright refractive body on a dark background. In this way transparent objects invisible by direct illumination are easily seen and studied. The ordinary $\frac{1}{12}$ oil immersion objective admits too much light and a special mount for the lenses containing a stop is required, which can be purchased at a trifling cost. For more than a year this valuable aid to diagnosis has been employed in Paris, and few Parisian experts would now give an opinion on a doubtful primary or secondary lesion without previously examining a scraping with the help of the ultra microscope. Out of a very large number of recent untreated chancres only two failed to show the *treponema pallidum* when thus examined. The technique is as follows: The chancre, papule or mucous plaque is dried and rubbed with some sterile gauze to remove any superficial discharge. The margin is then gently scraped till blood just begins to exude, the surface again dried, and a little blood or serum expressed. A small drop of this is removed with a platinum needle and mixed with a drop of sterile water on a thin glass slide. A large cover glass is now pressed down firmly so that only a thin layer of fluid remains between it and the slide, a drop of immersion oil placed both below the slide and on the cover glass, and the slide placed in position on the microscope stage with its under surface in contact with the ultra microscope. The latter is racked up or down till bright illumination on a dark background is obtained. Distilled water is the best medium in which to examine the *treponema*, as by osmosis the organism becomes swollen and more easily seen. The *treponema* is recog-

nized by its size ($5-25 \mu$), shape (helical), and movements (1. Bending. 2. Snake-like undulations. 3. Rotation round its long axis. 4. Concertina-like movements. 5. Local waves of contraction). After about half an hour the organism becomes more rigid and the movements sluggish; in two or three hours' time all movement usually ceases. The *treponema pallidum* is found below the surface and should be sought at the margin of the lesion. It cannot be detected in the center of an ulcerated or necrosed area, where the saprophytic spirochætæ may be seen in large numbers. It is found in mucous plaques, untreated chancres, usually in the papular syphilide, occasionally in scrapings from syphilitic lymphatic glands, seldom in the macular or roseolar rash. It has not been found in the blood by this method, except in some cases of congenital syphilis, nor in tertiary lesions. General or local treatment markedly influences the number of *treponemata* found, and the organisms tend to disappear after a few weeks from the site of the primary inoculation even without treatment. In the absence of treatment, a sore of doubtful nature can be demonstrated to be syphilitic, and so much valuable time may be saved and the annoyance of secondary manifestations prevented. H. W. Bayly (Practitioner, February, 1910).

TABES, TREATMENT OF.

The author has for eight years treated tabes with gradually increasing doses of strychnine, in the belief that, by maintaining nutrition of the degenerated spinal cells for a definite length of time, the degenerative process may be arrested or at least delayed. He begins with a dose of $\frac{1}{30}$ grain three times daily, given in tablet form, increases the dose to $\frac{1}{20}$ grain at the end of the first week and to

$\frac{1}{16}$ grain at the end of the second, then adds to the $\frac{1}{16}$ grain tablet one drop of a solution containing one grain of strychnine to one ounce of water. On the next day two drops are given, the following day three drops, etc., each day increasing by one drop until doses of thirty drops three times a day are reached. Since thirty drops of the solution equal $\frac{1}{16}$ grain of strychnine, the drops are discontinued and replaced by a $\frac{1}{16}$ grain tablet, making a total of $\frac{1}{8}$ grain three times daily. This dose is maintained for three months, then increased by means of the solution until $\frac{3}{16}$ is reached. This is maintained for at least three months; then the dose is increased as before. In this manner the increase in dosage is so gradual that few patients appreciate any difference. Seldom is there any improvement in the tabetic condition until a dose of $\frac{1}{4}$ grain three times daily is reached, though the patient's general health improves long before this period. After a maximum dose of $\frac{1}{2}$ grain is reached, it is maintained for about a year, then gradually reduced. The results obtained by this plan of treatment have been as follows: Though no case has been cured, pains have disappeared, control over the bladder and bowels has been regained, and locomotion decidedly improved. In almost all cases the disease was checked, and a great deal of improvement followed. The Argyll-Robertson pupil and the Romberg symptom did not disappear, nor did the knee-jerks return, but these are not symptoms of great moment. Patients are now under observation who have not had any strychnine for two years, and who show no signs of relapsing. In addition to use of this drug, the author thinks highly of Fränkel's exercises. He finds, however, that when the exercises are discontinued, the patient soon loses all the benefit derived from

them. G. M. Hammond (Medical Standard, March, 1910).

TABOPARESIS, THE PATHOLOGICAL PRO- DROMES OF.

The author presents and comments upon a recent important study made by C. Vincent, of Paris, who has brought together a considerable amount of clinical and pathological evidence in support of the contention of Nageotte that the nervous symptoms of tertiary syphilis are preceded regularly by a chronic inflammatory process in the meninges. The presence of this syphilitic meningitis in the cases studied by Vincent was shown by the abundant lymphocytosis found in the subarachnoid fluid obtained by lumbar puncture. That this lymphocytosis is actually an evidence of meningeal involvement is now pretty generally conceded, and is clearly proved by the discovery, after the death of the patient who has shown persistent lymphocytosis of small round cell infiltration and more or less advanced chronic inflammatory organization of the meninges. In one of Vincent's cases, enormous subarachnoid lymphocytosis was found six months before the development of paresis, of which the only previous sign had been a single sluggish and contracted pupil. In another case, pronounced lymphocytosis was found on lumbar puncture one year before cerebrospinal syphilis declared itself symptomatically by sudden complete paralysis of the face and all four limbs. A third case was that of a child aged eight, who developed interstitial keratitis only three months after the chancre and without secondary symptoms. The keratitis is presumptive evidence of lymphocytosis (with which it is invariably accompanied according to Vincent's experience) and hence probably of meningitis. Ten months later the eighth nerve

became involved, and in four months the girl became totally deaf in spite of treatment. Abundant lymphocytosis was found during this period. The histories of other cases are given, showing the continuity of the lymphocytosis of tertiary lesions with that so frequently observed in the secondary period. To the foregoing clinical evidence, a pathological demonstration is added which shows that the cranial nerves, when involved in the process which gives rise to *tabes dorsalis*, present appearances entirely homologous to those which Nageotte invariably found in the spinal roots. The case investigated showed a transverse radiculitis of the hypoglossal nerve. Although chronic, the process was in its incipency, and no weakness of the tongue had yet appeared. The variations of intensity in different fasciculi resembled those demonstrated by Nageotte in the spinal roots. Few axis cylinders were destroyed, though the myelin was extensively disintegrated. The pneumogastric nerve showed similar lesions, to which the symptoms of suffocation, *angoisse* and laryngeal crises could be referred. No mental symptoms had been present, although there was diffuse involvement of the cortical meninges, not yet invading the pial septa except in the bulb. Meningitis was very marked at the base of the brain, as well as along the spinal cord, which was that typical of *tabes*. The transverse radiculitis of Nageotte was present in the spinal nerve-roots. Tom A. Williams (*Medical Record*, February 5, 1910).

TUBERCULOSIS, PULMONARY, TREATMENT OF.

Menthol in the form of a 30 or 40 per cent. ointment is used with marked benefit in this condition. The ointment is rubbed in daily for ten minutes, the skin surfaces of the back, chest and thighs be-

ing successively employed for the treatment. Improvement is appreciable at the end of two or three weeks. The area of dullness diminishes in size and the auscultatory signs show a progressive tendency to return to normal. The accompanying symptoms, including expectoration and dyspnea, likewise disappear. It is claimed that the tuberculous inflammatory products are re-absorbed and obliteration of cavities favored, the remedy probably acting directly upon the involved tissues after absorption by the lymphatics. The treatment should be persistently employed for four or five months or more. No untoward effects were ever noted. Cases of acute tuberculosis and of tuberculosis in diabetic subjects are not benefited. The treatment is useful, however, in old fibroid pneumonic processes. Stepp (*Münchener med. Wochenschr.*, January 4, 1910).

TUBERCULOUS PERITONITIS, INJECTION OF AIR IN.

The author reports recovery in three cases of tuberculous peritonitis of serous exudative type which were treated by injection of air after removal of the fluid by paracentesis. All three recovered, the air being completely re-absorbed in the course of 6, 13, and 23 days, respectively, and no further exudation occurring. The peritoneal exudate is first removed by trocar, to which one of the tubes of an aspirator is then attached. A large syringe containing water is then inserted into the other tube of the aspirator. The water is gradually injected into the receptacle of the aspirator, the contained air being forced into the peritoneal cavity. The volume of air injected may be made to correspond with that of the fluid previously withdrawn. This procedure has already given good

results in the hands of a number of observers, and is, of course, advantageous by reason of its simplicity and harmlessness. A. Florio (*Gazzeta degli ospedali e delle cliniche*, January 2, 1910).

VOMITING IN INFANTS.

This symptom is more often the deferred result of some initial mistake in feeding than due to the method of feeding which is in force for the time being. The habit of vomiting is very easily acquired; it becomes, in fact, an automatic reflex so sensitive and insistent that food is rejected no matter what be its nature. Infants who have acquired this habit from injudicious methods of feeding during the time that the nerve-centers concerned are exceedingly plastic and impressionable are unavailingly treated by changes in the diet or by full doses of bismuth and soda. The only scientific method of treatment is to attempt to break the automatic nature of the habit by temporarily exhausting the center or by dulling its sensibility to stimuli which reach it through the stomach. For dulling the center, such drugs as chloral. bromide, or chlorotone are distinctly useful. As soon as the habit is broken the remedy may be suspended. The author has lately tried a method of exhausting the center, with encouraging results. He gives a harmless emetic, such as vinum ipecacuanhæ and carbonate of ammonium, about half an hour before feeding. After the violent stimulus of the emetic the stomach fails to respond by vomiting to the milder stimulus of food. He has employed the method in fifty-five cases; in thirty the cure was immediate and permanent, in ten the symptom was ameliorated, in five there was no improvement. In using this method it is of course essential that other causes of

vomiting, apart from habit, be excluded. E. Pritchard (*Clinical Journal*, February 2, 1910).

X-RAYS IN SKIN AFFECTIONS.

The X-rays are of particular value in the subacute and chronic forms of eczema. In the subacute vesicular variety mild applications are sufficient, but in squamous and pustular eczema more vigorous treatment is required. The rays are also beneficial in seborrhœic eczema of the face, the duration and frequency of the applications being governed by the nature of the individual case. In verrucose forms of eczema persistent treatment is necessary in order to secure definite results. Eczematous conditions of the lips, ears, axillæ and anal region are especially adapted for X-ray treatment, which is more effective in relieving itching than any available drug locally used. Care must always be taken to avoid adding an X-ray dermatitis to the inflammatory condition already present. Acne rosacea of chronic type with involvement of the dermis yields to fairly strong applications of the rays. Psoriasis is hardly to be specified as curable by this method; yet patches situated on the face and hands frequently disappear when it is employed. In cases which resist the ordinary therapeutic measures, or in which the use of chrysarobin or pyrogallol induces an erythematous condition of the lesions, the X-rays should always be tried. In the lichen simplex of Vidal the intolerable itching is soon relieved by the rays; the applications must be further continued for some time, however, in order to secure permanent relief. Lichen ruber planus of verrucose type is likewise markedly benefited, particularly if the lesions be situated on the hands or neck. Müller (*Deutsche medizinische Zeitung*, January 1, 1910).

Clinical Summary

Of all practical articles and abstracts that have appeared in the Monthly Cyclopædia and Medical Bulletin during the current year.

Addison's Disease. TREATMENT. Begin with 3 grains of desiccated adrenal gland three times daily after meals, and gradually increase the dose till temperature and pulse become normal; then maintain last dose. *Sajous.* 75

Adrenals, Diseases of. DIAGNOSIS. Adrenal insufficiency is suggested by: 1. Circulatory disturbances (small pulse, low tension, tachycardia, chilliness, white line). 2. Digestive disturbances (anorexia, vomiting, diarrhœa or constipation). 3. Nervous disturbances due to toxic irritation of plexuses around adrenals. 4. General disturbances (anæmia, emaciation, progressive amyotrophy). Diagnosis confirmed by benefit from organotherapy. *Boinet.* 27

Anæmia. TREATMENT. Seven cases of severe anæmia greatly benefited by transfusion of only 5 cubic centimeters (75 minims) of human blood. No benefit in cases of leukæmia. Transfusion of this amount generally harmless, though blood from certain persons showed some toxicity. *Weber.* 63

Angina Pectoris. DIAGNOSIS. Presence or absence of signs of organic disease at root of aorta should be ascertained. Signs of general arterial or aortic disease coexisting with history of precordial pain warrant diagnosis. A slight harsh clicking sound accompanying or following the sound of aortic closure, suggesting to the ear a roughening of the aortic cusps, is of value in the diagnosis. *Butler.* 22

TREATMENT. Erythrol tetranitrate has a less marked but more lasting effect than nitroglycerin. Especially indicated in those patients who are awakened at night by the pains. *Huchard and Fiessinger.* 172

Ankylosis. TREATMENT. Fibrolysin used with benefit in joints ankylosed as result of rheumatic affections. Single dose used was 2.3 cubic centimeters (37 minims) subcutaneously, sometimes more; largest total amount given was 117.3 cubic centimeters (4 ounces). Untoward effects: sometimes sensation of fatigue on day of injection, and occasionally slight local inflammatory reaction, which disappeared with moist dressings. Best results where ankylosis due to extra-articular connective tissue; less improvement in presence of pus and in gonorrhœal cases. Used in conjunction with hygienic and dietetic measures, warm sulphur baths, and later active and passive movements. *Knotz.* 124

Appendicitis in Pregnancy. TREATMENT. In severe cases operate without delay. Mild

cases do not demand operation unless there are frequent attacks. When near the end of gestation or in labor, terminate pregnancy and remove appendix immediately after. *Findley.* 160

Arteriosclerosis. DIAGNOSIS. Careful ophthalmoscopic examination frequently reveals the earliest signs of arteriosclerosis. *Bruner.* 23

Ascites. TREATMENT. Autoserotherapy retards transudation into peritoneum and produces lasting polyuria. Under local anæsthesia withdraw a little fluid from peritoneal cavity with sterile hypodermic syringe, and at once reinject in subcutaneous cellular tissues. Repeat at six-day intervals, injecting progressively larger doses of ascitic fluid (3, 5, 8, and 10 cubic centimeters). Continue treatment for two months. *Audibert and Monges.* 160

Asphyxia. TREATMENT. Adrenalin, slowly administered intravenously; 10 drops of 1:1000 solution in 1 drachm of saline solution. Artificial respiration. *Sajous.* 75

Asthma. TREATMENT. To arrest paroxysms, adrenalin (5 to 10 minims of 1:1000 solution in 1 drachm of normal saline) may be slowly injected into a superficial vein or hypodermically. *Sajous.* 75

Bronchitis, Chronic. TREATMENT. 1. Potassium iodide combined with syrup of hydriodic acid; may be alternated with terpin hydrate. Creosote is also valuable; combined with whiskey and glycerin it will rarely disagree with the patient. 2. Sedatives or anodynes to be avoided. The least objectionable are bromides, henbane, or codeine. Where dyspnoea or nervous irritability, Hoffmann's anodyne, with the iodide. 3. A mercurial followed by salts, once a week or oftener, reduces cough and expectoration for a time. 4. Persistent counter-irritation to the chest, using compound tincture of iodine; occasional intermissions when skin becomes tender. 5. Inhalations of a mixture of equal parts creosote, alcohol and spirit of chloroform, using perforated zinc inhaler. 6. Patient should not be housed. Change of climate where practicable; preferably to Georgia in winter, Adirondacks in summer. *B. Robinson.* 88

Carcinoma. TREATMENT. Quinine, stirred with water to a paste, used locally in cases of epithelioma where operation refused. Application repeated four times on alternate days. Caustic action at first exerted on ulcers, which later healed completely under simple iodoform dressing. Also useful in

palliative treatment of inoperable uterine cancer. The remedy is of diagnostic value, as on ordinary erosions it does not have the destructive effect produced on cancer. *Stroné*.

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The use of high-frequency currents found valuable in treatment of malignant growths, denuded surfaces, slowly healing wounds, and tuberculosis. On epitheliomas they exert a selective cytolytic action. Infected glands disappear, and discharge becomes odorless. Current has an analgesic effect. Time of application should never exceed 10 minutes. For internal growths current is used after operation to promote cicatrization. *Rivière*. 124

Acetone used in palliative treatment of 15 cases of inoperable uterine cancer. Hardens the tissues and stops hæmorrhage, septic absorption, and odor. After curetting under ether, solution of acetone is poured into the cavity through a conical speculum, contact with normal vaginal tissues being avoided. Hips elevated. Excess drained off through speculum and subsequently by tampon. When discharge begins again treatment is repeated without ether. Pain was not relieved but marked relief obtained from general infection. *Tovey*. 122

Carcinoma of Stomach. DIAGNOSIS. Danger-signal: middle age, loss of weight and strength, with perhaps some dull epigastric pain. If, in spite of six or eight weeks' careful treatment, symptoms increase in severity, loss of weight becomes more out of proportion to dyspepsia, appetite leaves, and some anæmia appears, diagnosis of probable malignancy is justified and operation indicated. *Deaver*. 175

Malignant disease has been demonstrated by X-rays, through its invasion of stomach-cavity and resulting changes in peristaltic waves. *Leonard*. 178

Carcinoma of Sigmoid and Rectum. DIAGNOSIS. 1. Early suggestive symptoms: Soreness in lower bowel, borborygmus, cramps, diarrhœa, mucus, pus, or blood, difficulty in completely evacuating bowel, distention in lower abdomen, with history of having felt something move after change of position. 2. Later: Emaciation, weakness, and pain in sciatic regions and calves of legs. 3. Local examination and removal of section of diseased tissue for microscopic diagnosis.

TREATMENT. Where obstructive distention requiring prompt relief, establish artificial anus, temporary or permanent according to extent of morbid invasion. Where immediate relief not essential, operation depends upon position of growth and surrounding infiltration. Complete excision wherever possible, with anastomosis or artificial anus. Preliminary colostomy may be advisable to improve chances of recovery after excision. Where excision of a sigmoid growth not possible, anastomosis may be established in one of several ways; in case of rectal or anal

growth, palliative treatment by drugs, with curettage and cauterization. Making of an artificial anus relieves pain, has low mortality as compared with excision, and often leads to distinct subsidence of growth. *Erdmann*. 169

Cataract. TREATMENT. Euphthalmin hydrochlorate in 3 or 5 per cent. solution used as mydriatic in cases of bilateral cataract where central opacity precedes cortical involvement and where iridectomy for any reason cannot be performed. Vision through the uninvolved cortical portion of the lens thus becomes possible. After using one or two drops in each eye, mydriasis begins in 20 minutes and lasts 4 to 7 hours. No untoward effects observed. *Dufour*. 165

Cellulitis with Gangrene. TREATMENT. Case of diffuse phlegmon of leg with gangrene treated successfully with: 1. Linear applications of thermocautery. 2. Subcutaneous injections of hydrogen peroxide 1 to 2 centimeters above infected area. 3. Passive hyperæmia induced thrice daily by rubber bandage above knee. 4. Daily bathing of part in warm permanganate solution. 5. Wet dressing of hydrogen peroxide. *Petit*. 173

Chilblains. TREATMENT. 1. Measures to allay co-existing irritative influences originating in various portions of body, as the naso-pharynx, teeth, respiratory or digestive tracts, etc. 2. Gymnastic exercises of extremities at hourly intervals. Arms raised above head, with alternate flexion and extension of hands and fingers. Similar movements of lower limbs. 3. Protection from cold. 4. Kneading, after raw surface of chilblain has become covered. *Jacquet and Jourdanet*. 162

Cholecystitis. TREATMENT. Irrigation with normal saline solution, at the rate of about six drops per second and with elevation of one foot, of biliary fistulæ, after drainage of gall-bladder for cholecystitis, cholelithiasis or cholangitis: 1. Produces prompt diuresis. 2. Hastens disappearance of chronic jaundice. 3. Often relieves post-operative biliary vomiting. *McArthur*. 87

Collapse from Hæmorrhage. TREATMENT. Suprarenalin or adrenalin given very slowly by intravenous method. Use 5 minims of the 1:1000 solution to a pint of warm saline solution (105° F.). In urgent cases, 10 drops may be given in 1 dram of saline solution, and repeated at intervals until heart responds. Artificial respiration hastens effects. *Sajous*. 75

Collapse in Infections. TREATMENT. Obscure collapse in infections often due to adrenal insufficiency. As soon as asthenia and lowered blood-pressure appear, administer adrenalin solution (1:1000) or cachets of glandular extract. In children give 10 to 20 drops of 1:1000 solution daily, divided into 5 or 6 doses. *Moizard*. 166

Coryza. TREATMENT. Sodium salicylate causes a cold to abort if taken within 24 to

36 hours. Single dose of $7\frac{1}{2}$ grains (0.5 gram) often suffices. Taken later, it relieves symptoms and shortens attack. It is also valuable in the chronic coryza of gouty subjects. Should be taken after eating, and preferably in small doses, dissolved in half a glassful of water. *Courtade.* Page 174

Delirium Tremens. TREATMENT. Veronal used in 100 cases, and all but 3 benefited. Initial dose of 1 gram (15 grains) in incipient cases, repeated in 3 hours if sleep does not follow. Sleep then usually lasts 6 to 8 hours and on waking patient is quiet and feels well. If tremor is still present, 0.5 gram ($7\frac{1}{2}$ grains) veronal may be given. The same dose every evening prevents insomnia. Where delirium is not controlled by the first 2 grams, another gram may be given 5 to 6 hours after the second dose. One case of veronal rash noted. *Müller.* 88

Diabetes. TREATMENT. Phosphoric acid preparations valuable in diabetic cachexia. Phosphoric acid, 75 grains, acid sodium phosphate, 150 grains, distilled water, 10 ounces; one tablespoonful in water at every meal. Contraindicated where albuminuria. *Cautru.* 163

Calcium iodide used in 17 cases in doses of 5 to 15 grains three times daily, after treatment with codeine and diet had proved unsatisfactory. In all cases subjective symptoms were improved and amount of sugar in urine diminished. *H. E. Smith.* 164

X-rays projected over hepatic region cause decrease in glycosuria and rise in red blood corpuscles. In one case amount of sugar passed daily was reduced by 400 grams. Particularly effective in grave forms with emaciation and debility, less so in mild cases and those of obese type. *Ménétrier, Touraine and Mallet.* 178

Diarrhoea, Dyspeptic, of Infancy. TREATMENT. Calomel, one grain in broken doses, followed in 2 hours by castor oil, one dram. Daily irrigation of colon. If much vomiting, wash out stomach and colon, and follow by starch enema not exceeding 2 ounces. For two days give barley water, 2 fluidounces every 2 hours; for next two days, whey, 2 fluidounces every 2 hours. *Hollopeter.* 97

Digalen. This form of digitalis is not invariably free from cumulative effect, as has been claimed, but is better borne by the stomach than the galenic preparations. *Mayor.* 164

Drowning. TREATMENT. Adrenalin, 10 drops of 1:1000 solution in 1 dram of saline solution, slowly administered intravenously. Repeated at intervals until heart responds. Artificial respiration. *Sajous.* 75

Dyspepsia of Old Age. DIAGNOSIS. Of every 100 cases in persons over 65 years of age, 66 are secondary to organic disease of some important organ (kidneys, prostate, heart, lungs, liver, pancreas, chronic gout, etc.); 34 are due to degeneration of gastric and intestinal secretory structures. *Fenwick.* 24

Emissions, Nocturnal. TREATMENT. Styptol (cotarnine phthalate) found to prolong interval between emissions to from one to three weeks in all cases. Two, then three, styptol tablets of $\frac{3}{4}$ gram each administered before retiring, for a month. Fluidextract of hydrastis, 40 to 60 drops before retiring, also recommended. *J. Koenig.* 127

Epilepsy. TREATMENT. Diet low in proteids caused reduction in number of seizures by 14 per cent. Each of the three daily meals given consisted of 125 grams of bread, 16 grams of butter, and 250 cubic centimeters of milk. *Rosanoff.* 89

Exploratory trephining advised in traumatic epilepsy. Eleven cases operated, four of idiopathic and seven of surgical epilepsy. Cysts found in two instances, cicatrices in four, and oedema of pia in all. Improvement resulted in all the cases from removal of oedematous fluid. Epileptic attacks returned in four cases. *Tilmann.* 127

Felon. TREATMENT. Operation advised as soon as diagnosis made. Patient should eat a substantial meal before the operation, and remain in recumbent posture until half an hour after operation is over. After applying tincture of iodine, inject sterile 1 per cent. cocaine solution in a circle at root of finger; as much as 3 or 4 grams (45 minims or 1 dram) of solution may be used. If felon very small, inject instead around lesion itself, 1 centimeter from its margin. Five minutes later incise, irrigate with hydrogen peroxide and establish drainage. Rest of treatment includes bathing of part in warm peroxide (1 in 4) and sterile compresses of same. *Appelmann.* 167

Fibrolysin. Best given by intramuscular injection in dose of 35 minims (2.3 cubic centimeters), every other day. Desired solvent effect on local connective tissues is kept up by massage of the part. Connective tissue surrounding old infectious foci may also be affected and dormant bacilli set free; hence it is well to search for and exclude previous inflammatory disturbances in every case before using this remedy. *Stocker.* 167

Fistula, Anal. TREATMENT. Posterior commissure is weakest part of anal circumference. In ulcerations or small fistulas of this commissure, author makes a triangular incision with apex towards anus. In fissures, an incision $\frac{1}{4}$ inch deep is made into sphincter muscle on each side of fissure, which thus remains undisturbed at defecation and heals more rapidly. *Briek.* 168

Furunculosis. TREATMENT. In furunculosis, carbunculosis, acne and subcutaneous abscesses brilliant results from vaccine therapy can be expected. In chronic cases, best results when a fresh vaccine is prepared from the pus every two to four weeks. Cautiously increase dose at successive inoculations. *Thomas.* 161

Gallstones. DIAGNOSIS. Too often delayed. In most cases condition begins before

fortieth year. Almost every patient will give history of long-standing dyspepsia, capricious appetite, constipation, flatulence largely independent of meals, and discomfort when stomach is empty. Later, acute attacks of pain in right upper abdomen may appear, and finally true biliary colic, with vomiting. Sensation of chilliness is characteristic. Jaundice, hæmatemesis, etc., as well as laboratory methods, are practically valueless for purposes of early diagnosis from gastric and duodenal ulcer. *Deaver.* Page 175

Goiter, Exophthalmic. ETIOLOGY. Acute rheumatism occupies an important place among infections which lead to development of Graves's disease. *Souques.* 165

Gonorrhœa. TREATMENT. Vaccine therapy caused marked improvement or cure in subacute and chronic cases. Functional results good. *Thomas.* 161

Hæmatocœle. TREATMENT. Every hæmatocœle after ectopic pregnancy should be removed by early operation. Abdominal route with Pfannenstiel's incision best. *Esch.* 62

Hæmorrhage. TREATMENT. Adrenal preparations valuable in capillary hæmorrhage from pharyngeal, œsophageal, gastric or intestinal mucous membranes. Mastication of tablets of adrenal substance, or ingestion of 5-grain capsules of same, causes vaso-constriction. *Sajous.* 75

Heart, Dilatation of. TREATMENT. In asthenic cardiac disorders with dilated right ventricle, dyspnœa and possibly cyanosis and œdema, the adrenal principle improves oxidation and metabolism in the cardiovascular muscles and tissues at large. Tablets of $\frac{1}{2}$ to 2 grains of desiccated gland after meals. *Sajous.* 75

Heart, Neuroses of. TREATMENT. In cardiac irritability: 1. Caffeine citrate and tincture of strophanthus, both best given in tablet-triturate, are promptly effective. Caffeine relieves headache and vertigo when present. Cactus useful in some cases; acts more slowly. 2. Local applications, as cologne, spirits of camphor, ammonia. 3. Light and easily assimilable diet. Avoid meats. 4. Quiet and rest for weeks at a time. 5. Nerve tonic: combined glycerophosphates of lime and soda, gr. v-x t.i.d. after meals. 6. Where gastric or intestinal intolerance: milk of bismuth or lactobacilline tablets. 7. To promote sleep: gentle massage of lower limbs before retiring. If hypnotic required, bromural, gr. v-x. *Beverley Robinson.* 163

Hernia. TREATMENT. A truss never cures a hernia in adult life, and rarely during childhood. Losses from disability due to hernia avoided only by early radical operation. *A. C. Wood.* 20

High Enemata. Only where the sigmoid is abnormally developed can a soft rubber tube be introduced higher than six or seven inches in rectum. Short tube six inches long

best for all sorts of enemata when using water for fœcal evacuation. It is possible to cleanse entire colon by using a short tube of $\frac{1}{2}$ inch caliber. *Soper.* 61

Hyperchlorhydria. DIAGNOSIS. Excess of free HCl alone does not warrant a diagnosis of primary hyperchlorhydria, which shows variable symptoms, both gastro-intestinal and nervous. Though 31.6 per cent. had lost weight, the appetite was generally good and examination of the gastric contents and fœces showed that digestive power was but little impaired. The nervous manifestations included periods of depression and mental confusion, irritability, various phobias, numbness, paræsthesias, and attacks of faintness. Male sex and constant mental strain seemed to be predisposing factors. *G. M. Piersol.* 65

Incontinence of Urine. TREATMENT. In persistent or increasing incontinence following labor operation is usually necessary. In the average case the Frank operation, combined with anterior and posterior colporrhaphy and an appropriate operation for retroversion when required, will bring about a cure. In marked dilatation of the urethra of long standing or where the muscular wall of the neck of the bladder and urethra have atrophied, Gersuny's operation offers best hope of cure. *Miller.* 90

Infant Feeding. Salts of cow's milk sometimes cause tendency to convulsions; treat by temporary salt-free diet. Sugar intoxication or intolerance of fats may likewise exist; treat by elimination of these from diet. *Neff.* 24

Intussusception. TREATMENT. Lateral anastomosis performed in 2 acute cases and advocated in preference to resection because of its comparative simplicity and safety. Tumor was found to disappear subsequent to operation. Not applicable, however, to gangrenous cases. *Parry.* 125

Iodine. As skin disinfectant. Some hours before operation field is shaved dry and painted with 10 or 12 per cent. tincture of iodine. Dry sterile dressing. Painting repeated on operating table. Author shaves and thoroughly cleanses skin 12 hours before iodine applied. Primary union in every case. *Jewett.* 63

Leprosy. TREATMENT. Oil of chaulmoogra is best given as a saponified preparation, in keratin-coated pills; the purified oil can also be injected in doses of 1 gram three times a week. Nastin injected in doses of 1 cubic centimeter gave good results. Great persistence in treatment, even after relief of symptoms, found advisable. Local treatment by resorcin, hydrogen peroxide, ichthyol, thiosinamine, etc., and baths, also useful. *Kupffer.* 169

Lupus Erythematosus. TREATMENT. Constitutional: regulation of diet to avoid overloading intestine; coffee or tea contraindicated; quinine often useful. Local: in hyperæmic stage, cooling lotions and ointment

of subacetate of lead, ichthyol lotion or ointment; in chronic cases, strong solution of ichthyol or iodine liniment; in severe conditions, linear scarification or light touches of thermocautery. High-frequency currents in subacute cases, Finsen light, X-rays or radium in chronic cases: particularly useful where thickening of the integument. *Morris.*

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Meningitis, Cerebrospinal. TREATMENT. Lumbar puncture as soon as distinct meningeal symptoms noted, draining away spinal fluid,—the more, the better. Next inject Flexner antineurococcus serum in spinal canal; quantity of serum should equal but never exceed quantity of fluid drained away. If lumbar puncture yields dry tap, and meningeal symptoms continue, aspirate lateral ventricles, if in an infant, through anterior fontanelle, and if in an older child, by the Kocher method: Shave small patch of scalp and make one-inch linear incision 3.5 centimeters from sagittal line and 5 centimeters anterior to sulcus centralis. Expose bone and perforate it with Doyen perforator followed by a burr, leaving cup-shaped fossa and exposing dura. Gently insert hollow exploratory needle, with blunt point and side-openings, perpendicularly into second frontal convolution; at a depth of 4 to 5 centimeters ventricle is readily found, particularly if distended. If pus present, drain ventricle and then wash with normal saline until fluid returns clear. Inject 20 to 25 cubic centimeters of serum. Repeat this procedure daily until tapping of ventricles is negative. If symptoms of intracranial pressure, as vomiting or convulsions, appear immediately after injection, however, repeat procedure only once in 48 or 72 hours.

Case of an infant two months old reported, in which intraventricular method of treatment led to complete recovery. Infant was fed at the breast, bowel function insured by enemas or an occasional dose of castor oil, and diuresis promoted by giving water. *Fischer.* 129

Nausea, Postanæsthetic. TREATMENT. Olive oil given by mouth in thirty cases of ether anaesthesia, after partial restoration of consciousness. In only one patient was nausea observed after its use. Where nausea had already begun it was at once checked by administration of the oil. *Graham.* 91

Nephritis, Acute. SURGICAL TREATMENT. Case of severe acute nephritis in a man 25 years of age, with no urine passed for 5 days, saved by decapsulation of both kidneys (Edebohl's operation). A few hours after operation both kidneys resumed function. *Karo.* 43

Nephritis, Chronic Interstitial. TREATMENT. 1. Diet. Fairly full diet combined with free elimination usually gives best results. A little meat with short fiber (as mutton, chicken) may be allowed at noon, and in morning or evening some fish; vege-

table food, preferably farinaceous; milk freely; stimulants prohibited. Urine and general condition of patient should be watched in relation to diet. 2. Hygiene. Freedom from anxiety and overwork; moderate exercise; warm, dry and equable climate. 3. Physical measures. Free sudation by hot air baths, vapor baths, or hydrotherapy, carefully avoiding renal congestion. 4. Drug therapy. Sodium iodide, gr. xv-xxx, sodium phosphate, gr. xxx-xlv, sodium chloride, gr. xc, water *Oij*; to be taken freely as a drink.

Purgatives. Where marked anaemia: Basham's mixture or triple arsenates with nuclein. In failing compensation: digitalin combined with a vasodilator, as one of the nitrites (at first in small doses). Veratrine (0.5 milligrams or gr. $\frac{1}{134}$ every half hour until pulse relaxed) is a safe and effective vasodilator for continued use. In bad cases opium in small doses (2 to 4 minims of deodorized tincture) strengthens heart and dilates arterioles. When complications occur, stimulants, diuretics, purgatives and diaphoretics may be indicated. In dyspnoea, quebrachine hydrochlorate or aspidospermine valuable. *Butler.* 171

Neuralgia. TREATMENT. One to two grains of 1 : 1000 adrenalin ointment applied to skin over affected area in neuralgia and neuritis produces ischaemia of the hyperæmic nerves and thus arrests pain. *Sajous.* 76

Obesity. TREATMENT. Strict vegetable diet for 4 to 6 weeks, then 150 to 200 grams of lean boiled meat 3 times a week or once daily. This diet kept up for months, and tends to protect from returning corpulence. If weight begins to increase, drop meat again for 4 to 6 weeks. Such diet best corrects obese tendencies without impairing general health. Supplement by exercises and hydrotherapeutic measures. *Albu.* 25

Osteomalacia. TREATMENT. In a case of non-puerperal osteomalacia, after two years in bed and failure of all other measures, suprarenal extract given according to Bossi's technique. From 8 to 10 injections of 1 cubic centimeter made each month. By the thirtieth injection great improvement was manifest, and in time the entire syndrome arrested, with almost complete restoration of function. *Bernard.* 92

Otitis Media, Chronic. TREATMENT. Perhydrol in 2 to 6 per cent. solution found useful. Patient drops solution into ear and remains on side for 10 minutes; auricle is then dried and cotton inserted in meatus. Where much suppurative, repeat morning and evening. Inspissated pus is dislodged, and cholesteatoma also yields. *Bresgen.* 125

In late stages:—If tube diseased: inflation, with bougieing if stenosis exists. Intratympanic injections of menthol oil, iodine solutions, pilocarpine, menthol giving best results. Where fixation of the ossicles: pneumomassage; injection of fibrolysin sometimes valu-

able. Operative measures: mobilization of the malleus, synechotomy and tenotomy of the tensor tympani, eventual excision of the malleus and incus. *Yearsley.* Page 61

Patella, Fracture of. TREATMENT. Open operation indicated: 1. In all recent fractures of patella in the absence of contraindications, and where non-operative treatment would lead to disabling effect or fragments cannot be exactly replaced by manipulation. 2. Compound fractures. 3. Comminuted fractures. 4. Where considerable intra-articular effusion. 5. Where marked laceration of periarticular tissues. 6. Where separation has at any time exceeded 3 centimeters. 7. In such fractures as are liable to cause serious functional impairment, as where bony fragments have escaped into joint cavity. 8. In bilateral fractures. 9. In all refractures. 10. In old fractures associated with marked impairment of function, and where results of non-operative treatment have been unsatisfactory.

In compound fractures, prompt operative intervention is demanded. In subcutaneous fractures, operation may be deferred from 3 to 5 days. In the interval flexion is prevented by a posterior plaster-of-Paris splint, and absorption of fluid hastened by compression with gauze or elastic bandages. In operating, prepatellar fibroperiosteal tissues must be sutured, and all tears in soft tissues surrounding patella carefully repaired. To assist in maintaining apposition of bony fragments, patella is circumferentially looped by a ligature passed close to its periphery and imbedded in the quadriceps tendon and ligamentum patellæ midway between their anterior and posterior surfaces. Where separation slight and prepatellar tissues practically un torn, procedure may be limited to looping fragments and fortifying prepatellar tissues by V-shaped kangaroo tendon sutures, without entering joint-cavity. Otherwise, all fluid and clots in joint and subquadricepsal *cul-de-sac* may be removed by gauze swabs mounted on artery forceps; irrigation inadvisable. While patient still under anæsthesia, apply moulded and padded plaster-of-Paris splint covering posterior and lateral surfaces of limb, with leg in full extension and thigh slightly flexed. This splint is to be used for about a month. First motions of patella should be lateral. Begin cautious flexion of knee one month after operation. *Heineck.* 114

Pelvic Inflammation. TREATMENT. Abscess. Simple vaginal incision with drainage; if condition becomes worse, abdominal section, by extraperitoneal method if possible, should be attempted. *Esch.* 62

Hot mud compresses over abdomen recommended in chronic exudative adnexal inflammations and pelvic exudates. The heat is much better borne than in hot water applications, and 10° C. greater heat can be applied. If surface be covered with woolen

cloths, heat retained for several hours. Causes hyperæmia and promotes removal of exudate. Contraindicated in acute cases. *Cukor.* 63

Pericarditis. ETIOLOGY. Myocardial degeneration, leading to dilatation, predisposes to pericarditis. Overaction of heart may induce pericardial inflammation. Chronic adhesive pericarditis frequent but often impossible of diagnosis, serious symptoms arising only when myocardium itself is diseased. *Brooks and Lippencott.* 26

Peritonitis. PROGNOSIS. Degree of improvement in circulation caused by intravenous saline infusion is an index of the extent of vasomotor paralysis, the effect persisting in proportion to recuperative power of vessels. If infusion causes no circulatory improvement little benefit can be anticipated from operation. *Lichtenberg.* 126

TREATMENT. Restrict the amount of tamponing and never insert a tampon between loops of intestine. Fowler position always exerts favorable influence. *Dege.* 64

Phenolphthalein. Acts in about 6 hours and has no constipating after-effect. Sometimes loses its effect on continued use, and may cause diarrhœa. Dose: 3 to 5 grains *t.i.d.*, in powder, pill or capsule. Five grains is probably the largest safe dose. In a child, begin with $\frac{1}{2}$ grain. *Gilbride.* 172

Pleural and other Effusions. TREATMENT. To prevent recurrence, after aspiration, of serous effusions into the pleura, peritoneum, tunica vaginalis, etc., 8 minims to 2 drams (according to size of cavity) of suprarenalin or adrenalin in four times the quantity of saline solution, may be injected into the cavity. *Sajous.* 76

Pleurisy, Syphilitic. DIAGNOSIS. All serous exudations in syphilitics cause deviation of the complement; hence a diagnosis of syphilitic pleurisy, as distinguished from pleurisy of other origin in a syphilitic, must be based on data other than the serum reaction. *Roger and Sabartanu.* 173

Pyelitis in Infants. DIAGNOSIS. Of 9 cases in children ranging in age from 9 months to 2½ years, six had high fever, five, frequent micturition, three, chills, one, pain, and one, tenderness in lumbar region. None vomited. Diagnosis depends on urinary findings: pus, epithelial cells, occasionally blood corpuscles, and no casts.

TREATMENT. Urotropin, $\frac{1}{2}$ to $\frac{3}{4}$ grain every two hours, very effective. *Gray.* 174

Rheumatic Heart Disease. DIAGNOSIS in children. 1. Subcutaneous nodules generally indicate active cardiac disease. 2. Evening fever without previous cause suggests fresh cardiac inflammation. 3. Joint pains. 4. Sudden appearance or increase in anæmia. 5. Persistently frequent pulse. *Carr.* 26

Septicæmia. TREATMENT. In the presence of persistently low blood-pressure, hypothermia, and cyanosis, adrenalin is valuable when very slowly administered intravenously in the

proportion of 5 minims of the 1 : 1000 solution to a pint of warm saline solution (105° F.). It enhances pulmonary and tissue respiration and the activity of the immunizing process. *Sajous*. Page 75

Shock. TREATMENT. Suprarenalin or adrenalin, very slowly administered intravenously; 5 minims of the 1 : 1000 solution to the pint of warm saline solution (105° F.). In urgent cases, 10 drops may be given in 1 dram of saline solution. Artificial respiration hastens effects. *Sajous*. 75

Shock, Post-Operative. PROPHYLAXIS. Pituitary extract (1 cubic centimeter of 20-per-cent. solution of posterior lobe) was injected in three cases before complete recovery from the anæsthetic, in conjunction with normal saline by rectum. The pulse, previously barely perceptible, almost at once became large and bounding, slow, and regular, this effect lasting 12 to 16 hours. *Wray*. 93

TREATMENT. In shock after abdominal operations, remove two skin-sutures near navel and insert glass tube joined by rubber tubing to receptacle containing saline solution at 112° F. Pass the tube upward beneath omentum and transverse mesocolon to region of solar plexus, and run in one pint of hot saline, causing rise of blood-pressure by heat and pressure stimulation of sympathetic system. Remove tube, cover wound with gauze, and apply binder to sustain pressure. Inject 10 ounces of hot saline in rectum every 2 hours. *Hopkins*. 159

Splenic Enlargements, Primary. TREATMENT. Iron, arsenic, iodine, glandular and marrow extracts have only a temporary or uncertain action in these conditions. X-rays cause general improvement in Banti's disease, and should be projected over the spleen through an aluminium screen. Except in infantile splenic anæmia, splenectomy is, however, often preferable in that it yields lasting benefit. *Bozzolo*. 175

Stricture of Urethra. TREATMENT. OPERATIVE. Median incision down to urethra, dividing structures of bulb in median line. Divide stricture by longitudinal incision 1½ inches long. Remove excess of scar tissue, or excise whole strictured portion if necessary. Mobilize anterior segment of urethra and join to posterior segment without tension, sutures being passed from without inward. If roof of canal has been left intact, bring together margins of longitudinal incision transversely, as in pyloroplasty. When ¼ of circumference sutured pass No. 28 sound into urethra; complete the sutures around it. Open urethra on the sound at a point as far behind stricture as possible and introduce No. 12 (English) soft rubber catheter. Suture wound in layers, leaving space at lower angle for catheter. Resection applicable to all strictures of bulbomembranous portion not amenable to gradual dilatation and not complicated by infiltration of urine or fistulas. *Cabot*. 126

Suprarenin. Poisonous dose varies with

the individual. Danger arises from: 1. Concentration of solution used. Large amount of a weak solution is without danger. 2. Method of introduction. Intravenous injection gives immediate bad effect; locally or subcutaneously it is well borne. Author employs solution of 0.64 gram suprarenin borate in 100 cubic centimeters of 0.5 per cent. novocaine, made up fresh from tablets for each operation; 125 cubic centimeters of such solution used without danger. *Braun*. 127

Syphilis. TREATMENT. Mercurof found useful to alternate with the protiodide and in cases where the ordinary preparations of mercury cannot be assimilated; gr. j three or four times daily. Author advocates course of twenty inunctions of the official ung. hydrarg. at the outset of every case of syphilis, before beginning internal administration. Where latter causes serious gastro-intestinal disturbance, and the symptoms of the disease are marked, inunction treatment is to be adopted. Course of three weeks of inunctions in the spring and fall for four or five years recommended. In cases of ulcerating tubercular syphilodermata and gummata best results obtained using potassium iodide (gr. x-xx t.i.d.) along with mercurial inunctions twice daily. Mercury is as valuable in tertiary as in secondary syphilis. *Christian*. 45

Tetany. TREATMENT. Infundibular extract (20 per cent.) of Burroughs, Wellcome & Co. recommended; given by intra-muscular injection in doses of 7 drops t.i.d., or oftener. If used subcutaneously it might cause necrosis of skin by vaso-constriction. Not poisonous. *Ott and Scott*. 99

Tetany, Gastric. TREATMENT. Soluble calcium salts rapidly control symptoms in the tetany of gastrectasis; continued use required. Large saline infusions, as well as parathyroid preparations (nucleoprotein) by the mouth, are but slightly effective. *Kinnicutt*. 123

Tic. DIAGNOSIS. True tic, which is of psychic origin, and is a sequel to the un hindered repetition of a once voluntary purposive act, is distinguished from spasm, which is due to irritation of any reflex arc of the bulbo-spinal tract, as follows: 1. Movement slower. 2. Occurs in volleys. 3. No muscular weakness. 4. Reflexes normal. 5. Painless. 6. Disappears in sleep. 7. Pseudo-coordinate and intentional. 8. Influenced by volition or emotion, and followed by satisfaction. Upon this distinction depends whether treatment shall be surgical, medical or psychotherapeutic. *T. A. Williams*. 5

Toxæmia of Pregnancy. TREATMENT. Failure of thyroid gland to hypertrophy during pregnancy probably related to toxæmia. Administration of thyroid beneficial by supplying this deficiency and by diuretic action. Saline extract of fresh human thyroid proteids more rapid and reliable in action than ordinary sheep thyroids. Hypodermic use of thyroid proteids greatly superior to oral use. *Ward, Jr.* 27

Traumatic Neurosis. **DIAGNOSIS.** In response to galvanism the anodic closure contraction equals or surpasses the cathodic closure contraction, as in the reaction of degeneration, but in tracings of muscular contractions the peaks are not rounded as in the reaction of degeneration but sharp and angular as with normal contractions. Increased excitability is observed on both affected and sound sides. *Larat.* Page 124

Tuberculosis, Pulmonary. **DIAGNOSIS.** X-ray method contributes to early diagnosis. Where symptoms point to pulmonary lesion but no physical signs are demonstrable, radiography may show peribronchial infiltration or enlarged bronchial glands. Later, consolidated areas and cavities can be accurately located at any depth within the lung. *Leonard.* 177

TREATMENT. Mercury succinimide administered hypodermically in 8 cases caused general improvement and appeared to exert a marked controlling influence over the tuberculous process. *Freeman.* 90

Beechwood creosote given both internally and by inhalation affords much relief to symptoms in nearly all cases and in all stages. It is also valuable as a preventive in those predisposed or exposed to the infection. Rest, fresh air, proper food, with or without lime salts. *Beverley Robinson.* 23

Early tuberculosis treated by antiseptic inhalations with remarkable results. Solution used: Phenol, creosote, spirits of chloroform, of each 8 cubic centimeters (3ij), tincture of iodine, spirits of ether, of each 4 cubic centimeters (f3j). Of this 6 to 8 drops are poured on the felt or sponge of Yeo's perforated zinc inhaler, and inhaled regularly every hour in the daytime, as well as 2 or 3 times during the night, when patient is awake. Cough is thereby relieved without sedatives and expectoration facilitated. Where hæmoptysis, add turpentine to the solution. In all cases patient should rest in bed for a week, with windows of bed-room open. In second week he may rise for an hour or two daily, and later walk in the open air every morning. When temperature is normal, use of inhaler may be gradually left off. *Lees.* 93

Tuberculosis, Superficial. **TREATMENT.** Mercury succinimide (gr. $\frac{1}{2}$ subcutaneously every other day) with mercury protiodide (gr. $\frac{1}{4}$ by mouth *t.i.d.*) gave good results in two obstinate cases of scrofuloderma and one of pharyngeal infiltration. Curetting, cauterization and X-rays ineffective until mercury added. *Hertzberg.* 25

Typhoid Fever. **INTESTINAL PERFORATION.** Mortality after operation for perforation in children is below 50 per cent.—25 per cent. lower than in adults. *Jopson and Gittings.* 25

RUPTURE OF SPLEEN. This accident occurs most frequently in beginning of the third week, or in convalescence. The enlarged typhoid spleen should be merely touched daily, not handled. **PROPHYLAXIS:** Ice-bag to the spleen.

DIAGNOSIS: Preliminary pain under left costal arch, sudden increase of pulse-rate by 20-30 beats, evidence of internal hæmorrhage, followed by rapid rise of temperature; liver dullness not obscured; X-rays. **TREATMENT:** Immediate saline infusion and Fowler's position, splenectomy, followed by continuous peritoneal lavage with two glass tubes, below diaphragm and above pubis. *Bryan.* 28

TREATMENT. Alcohol compresses to the abdomen in children advocated in preference to the cold tub-bath treatment, which author regards as favoring hæmorrhage or perforation and as liable to work injury to the heart. Compresses used in 12 severe cases which were rendered milder. Pad of absorbent cotton or eight thicknesses of gauze wrung out in 85 per cent. alcohol (90 per cent. for adults), applied to abdomen, covered with cold water gauze compress, and held in place by flannel band. Water compress renewed every hour, alcohol compress every 2 hours. Acts by local active hyperæmia, while alcohol absorbed stimulates heart. Used also in peritonitis and appendicitis with benefit. *Cheinisse.* 122

Ulcer of Leg, Syphilitic. **TREATMENT.** Reduce alcohol consumed. Mercury and iodides, preferably organic iodides, well diluted, alternated with courses of strychnine particularly when ulcer again becomes sluggish. General antiseptic application: Boroglyceride 3j, hot water Oss. Locally, black or yellow wash; solution of phenol (1 to 100); tincture of iodine (1 to 4 or 5 of hot water); ammoniated mercury or yellow oxide ointments. Dry treatment: Zinc oxide 3iij, calomel, 3ss, infusorial earth q. s. ad. 5j. X-rays have benefited some cases. Where ulcer resists cure due to tethering of its edge to underlying bone, apply antiseptic fomentations, scrape ulcerated surface with Volkmann's sharp spoon, undercut edges with scalpel, and draw them together, freshening skin-margins. *W. Evans.* 23

Uncinariasis. **DIAGNOSIS.** In mild cases eosinophilia is often not available for diagnosis. Following method recommended: Dilute faecal material ten times with water and centrifugate at high speed for 6 or 8 seconds. Pour off supernatant fluid, shake sediment with water, and centrifugate again just long enough to throw eggs to bottom (usually 2 seconds). Repeat once or twice, remove sediment with pipette and examine for eggs. Calcium chloride solution assists in removal of debris. Large amounts of faeces may have to be examined before eggs discovered. *Bass.* 168

Vomiting of Pregnancy. **TREATMENT.** Adrenalin used with success in a case previously uncontrollable. Ten drops of 1 to 1,000 adrenalin solution given morning and night, at first in enema of 150 grams (5 ounces) water with 20 drops of laudanum, after 3 days in ice-water by the mouth. Nutrient enemata also given. Vomiting ceased

on second day, and on third patient could retain a little food. Recurrence of nausea toward end of pregnancy relieved by 10 drops daily for 5 days. *Rebaudi.* Page 94

Whooping-Cough. TREATMENT. Oxygen used in 30 cases. It is given at each par-

oxysm. Cyanosis subsides and suffocation is prevented. Child keeps in good condition with appetite throughout. It is best inhaled through a funnel; 10 to 12 liters necessary to control a paroxysm. Where broncho-pneumonia threatens, oxygen should be inhaled every hour; it renders lung aseptic. *Weil.* 64

National Association of U. S. Pension Examining Surgeons.

The Ninth Annual Session of the National Association U. S. Pension Examining Surgeons will be held at the Ebbitt House, Washington, D. C., Monday, May 2, 1910, at 10 A.M. Because of favorable circumstances surrounding the coming session, it is the desire of the officers to make the meeting equal if not surpass all others in interest and numbers.

Book Reviews

A TEXT-BOOK OF PRACTICAL OBSTETRICS. By Egbert H. Grandin, A.B., M.D. (Harvard), Gynecologist to the Columbus Hospital, Consulting Gynecologist to the French Hospital, late Obstetric Surgeon to the New York Maternity Hospital, etc.; with the collaboration of George W. Jarman, M.D., Gynecologist to the General Memorial Hospital, late Obstetric Surgeon to the New York Maternity Hospital, etc., and Simon Marx, M.D., late Surgeon to the New York Maternity Hospital, late Lecturer on Obstetrics New York Post-Graduate Medical School, etc. Fourth Edition, Revised and Enlarged. Octavo of xvi + 539 Pages, with 47 Full-page Plates and 116 Illustrations in the Text. Philadelphia: F. A. Davis Company, 1909. Cloth, \$4.50, net.

Since the third edition of this useful book was issued in 1900, many changes have taken place in the practice of obstetrics. The work as now presented has been extensively altered in conformity with these changes and will be found fully abreast of the times. The latest views on the toxæmia of pregnancy have been added and the entire subject of the surgery of labor and of the puerperal state has been re-written. The original aim of the work was toward brevity, accuracy and practicability, and these characteristics have been preserved in the present edition. Notwithstanding the numerous additions and alterations the book is only 20 pages longer than before. Several new full-page plates have been added which, taken in conjunction with those already introduced, form a valuable feature of the work, illustrating the various fetal positions, the taking of the pelvic measurements, the routine procedure of delivery, various complications of labor, etc. The text is concise and well-written. In the chapter on anatomy and physiology only the essentials are stated, the authors having designed the work as a guide to practice rather than a complete treatise. Successive portions of the book deal, respectively, with pregnancy, labor, the puerperal state, and obstetric surgery. Questions on which various authorities differ have been dealt with in accordance with the general consensus of opinion rather than by an enumeration of their individual views. On the whole, the work constitutes an extremely lucid and readable presentation of the practical data of obstetrics. It is an excellent book for the student and will prove reliable in the hands of the general practitioner.—C. E. DE M. S.

SURGERY: ITS PRINCIPLES AND PRACTICE. Edited by W. W. Keen, M.D., LL.D., Hon. F. R. C. S., Eng. and Edin., Emeritus Professor of the Principles of Surgery and of Clinical Surgery, Jefferson Medical College, Phila., and J. Chalmers DaCosta, M.D., Professor of the Principles of Surgery and of Clinical Surgery, Jefferson Medical College. Volume V: Octavo of 1274 Pages, with 550 Illustrations, 45 in Colors. Philadelphia and London: W. B. Saunders Company, 1909. Per volume: Cloth, \$7.00, net; Half Morocco, \$8.00, net.

This is the final volume of the series, and the editors are to be congratulated on the completion of this important work, which stands pre-eminent not alone in the recognized worth of its 69 contributors but in the practical qualities and general availability of its text and illustrations. The entire work now covers 5500 pages—an increase of 1500 over and above the number originally promised. The fifth volume is no less excellent than those which preceded it. An especially attractive feature is the opening article by Rudolph Matas on the "Surgery of the Vascular System." This covers 350 pages, and contains, among others, excellent sections on the surgery of heart wounds, on arterial suture, on the treatment of

hemorrhage, and on the treatment of aneurism, general and special. Reference is made to the author's operation of "endoaneurismorrhaphy." The procedure of intravenous saline infusion is admirably described and illustrated. The succeeding 240 pages are devoted to the "Surgery of the Female Genito-Urinary Organs." P. Brooke Bland describes the methods of examination and diagnosis, John M. Fisher the "Surgery of the Vulva and Vagina," and E. E. Montgomery, that of the Uterus and Adnexa. A number of good illustrations of the various operative procedures are included. John H. Gibbon next deals in an admirable manner with "Surgical Technic," including antisepsis and asepsis, the materials employed, the preparations for operation, post-operative treatment, etc. Warren S. Bickham describes the ligation of arteries in continuity and the amputations in his usual faultless style, and J. P. Warbasse contributes an excellent article on the operations on the bones and joints. The remainder of the work contains the following useful sections: "Plastic or Reconstructive Surgery," by John B. Roberts; "Surgery of Accidents," by William L. Estes; "Surgery of the Parathyroid Bodies," by Charles H. Mayo; "Intracranial Surgery of the Fifth and Eighth Nerves," by Charles H. Frazier; "General Anesthesia and Anesthetics," by Hobart Amory Hare; "Local Anesthesia," by Karl G. Lennander, and "Spinal Anesthesia," by Fredrik Zachrisson; "Surgery of the Infectious Diseases," by G. E. Armstrong; "The X-ray and Radium in Surgery," by E. A. Codman; "Legal Relations of the Surgeon," by Hampton L. Carson, Esq.; "The Laboratory as an Aid to Surgical Technic and Diagnosis," by W. M. Late Coplin; and "The Surgical Organization of a Hospital," by Albert J. Ochsner. Each article is followed by a well-selected bibliographic list. The volume contains an extensive array of illustrations, including five full-page plates. It forms a fitting conclusion to this imposing work, in the preparation of which the editors, contributors and publishers have each performed their task in so admirable a manner.—C. E. DE M. S.

PRACTICAL THERAPEUTICS AND PRESCRIPTION WRITING. By Daniel M. Hoyt, M.D., Instructor in Therapeutics, University of Pennsylvania; Assistant Physician, Philadelphia Hospital; Fellow of the College of Physicians. Octavo of xx + 291 Pages. Philadelphia: Edward P. Dolbey & Co., 1909.

This book was written for the purpose of furnishing a summary of the physiological actions of drugs that have a direct bearing on the management of disease and to explain the principles of rational prescribing and treatment. It should prove useful to all who desire a succinct presentation of the essential facts of therapeutics. It has greater practical value than most similar works. In the introductory section are briefly discussed the general principles of drug action, the rules of dosage, the methods of administration, the elements of prescription writing, and the incompatibilities. The various remedies in general use are then taken up in detail, grouped according to their chief effects, each drug being considered as to its physiological action, toxicology, preparations, dose, and chief therapeutic uses. A number of useful formulæ are included in the text. The final one-third of the book consists of an index adapted from the "Physicians' Manual of the Pharmacopœia and National Formulary," including all the official preparations with their compositions, doses, etc. This will be found very convenient for reference. On the whole, Dr. Hoyt's book can be warmly recommended, to students especially.—C. E. DE M. S.

HUMAN PHYSIOLOGY. An Elementary Text-Book of Anatomy, Physiology, and Hygiene. By John W. Ritchie, Professor of Biology, College of William and Mary, Virginia. Pp. vi + 362. Illustrated by Mary H. Wellman. Yonkers-on-Hudson, N. Y.: World Book Company, 1909. List price, 80 cents; mailing price, 96 cents.

This small volume was written with the object of teaching the pupils of our schools how to keep their bodies in health. Recognizing fully that a presentation of anatomical and physiological facts alone would not secure the desired end, the author has interwoven with them a full discussion of the principles of hygiene and their applications, as well as an elementary review of the principal germ diseases. The book is thus not alone a "physiology," but also includes much that will prove useful in practical applications of this branch. We notice, in addition to the usual systematic consideration of physiology, chapters on dietetics, ventilation, the effects of alcohol on the body, etc. Throughout the work the author has lost no opportunity to emphasize the importance of correct habits of living. The illustrations are numerous and well-chosen. On the whole, the book is highly commendable, and shows that a great deal of thought has been expended in its preparation. We hope that many schools will adopt it for use in their classes.—L. T. DE M. S.

POCKET FORMULARY FOR THE DISEASES OF CHILDREN (Formulaire de poche pour les maladies des enfants). By Dr. Jules Comby, Physician to the Hôpital des Enfants Malades, Paris. Third Revised Edition. One volume, 18mo, 637 Pages. Paris: Vigot Frères, 23, Place de l'École de Médecine, 1910. Flexible Binding: 8 francs.

The third edition of this useful little work has been carefully revised and modified in accordance with the changes in the new French "Codex." In the first part are given con-

denser descriptions of the treatment of all the affections of children, arranged in alphabetical order. Numerous formulæ are interspersed. In the second part is presented a very complete list of remedies, including physiotherapeutic measures, available in the treatment of children's diseases. The therapeutic uses and modes of administration of the various drugs are fully described, and additional formulæ given. The work as a whole is a model of painstaking attention to details. It contains in its small but closely printed pages an immense amount of practical information, and well serves the purpose for which it was intended.—L. T. DE M. S.

RECENT ADVANCES IN PHYSICAL AND INORGANIC CHEMISTRY. By A. W. Stewart, D. Sc., Lecturer on Organic Chemistry in the University of Belfast. With an Introduction by Sir William Ramsay, K.C.B., F.R.S. Octavo of xiv + 287 Pages, with Diagrams. London and New York: Longmans, Green, & Co., 1909. Cloth, \$2.50.

This interesting work deals for the most part with chemical researches which have been carried out in the past two decades, the chief aim kept in view in its preparation having been to avoid as far as possible those themes which have been frequently and fully taken up in text-books. It comprises fourteen chapters, in each of which is given a clear and concise review of some subject now prominent in the minds of chemists. Among the topics considered are: the colloids; the fixation of nitrogen; double salts; the problem of the oceanic salt deposits; the cobaltamines; absorption spectra; elements of the rare earths; determination of atomic weights; the inactive gases; and the radio-active elements, changes, and emanations. Of these the first and last mentioned are likely to find most favor with medical readers, the colloids representing a class of bodies of paramount importance in the structure of living tissues, whilst the radio-active substances seem destined to occupy a definite place in therapeutics. The book should prove of great value to all who are interested in recent progress along these lines. The author is to be congratulated on the clear and readable manner in which the facts have been presented.—L. T. DE M. S.

AN ENGLISH HANDBOOK TO THE PARIS MEDICAL SCHOOL. By A. A. Warden, M.D., Visiting Physician to the Hertford British Hospital, Paris. Second Edition. Octavo of 52 Pages, with Map. Philadelphia and London: P. Blakiston's Son & Co., and J. & A. Churchill, 1910. Price, 50 cents.

This small work is intended to assist the English-speaking foreigner in Paris in finding promptly the post-graduate or special medical work that he has come to pursue. It contains a list of the professors and the "agrégés" of the Faculty of Medicine, a catalogue of the hospitals in Paris, and some details concerning the medical societies and their meetings, the museums and libraries, the Pasteur Institute, the Institute of France, etc. Under the name of each hospital are given its location and the means of reaching it, the physicians and surgeons who have wards in it, and the days and hours of their visits and lectures. In this, the second edition of the book, have been made the alterations rendered necessary since the first issue in 1903 by the death of certain of the Faculty members and the transference of physicians from one hospital to another. Thus brought up to date, the work will give the reader a correct general idea of the attractions offered to visiting medical men in the French capital. It includes a small map of the city showing the location of the various hospitals and other institutions, which should prove helpful.—C. E. DE M. S.

DISEASES OF THE EAR. A Text-Book for Practitioners and Students of Medicine. By Edward Bradford Dench, Ph.B., M.D., Professor of Diseases of the Ear in the University and Bellevue Hospital Medical College; Aural Surgeon, New York Eye and Ear Infirmary; Consulting Otologist to St. Luke's Hospital; Consulting Otologist to the New York Orthopædic Dispensary and Hospital; Fellow of the American Otological Society; of the New York Academy of Medicine; of the New York Otological Society; of the New York County Medical Society, etc. With 19 Plates and 158 Illustrations in the Text. Fourth Edition, Revised and Enlarged. New York and London: D. Appleton & Company, 1909.

The same high standard which characterized the earlier editions of this work is manifested in the present volume. The advances made in the various branches of otology during the past six years have been carefully studied and the more practical features have been incorporated in the text. Several chapters have been rewritten, among which are included those on Cerebral and Cerebellar Abscess. The author has here combined the results of his extensive experience in this branch of surgery with those of other observers, and has thus made this section of added value. The operative technique is considered in detail.

Labyrinth Suppuration is another subject to which careful attention has been given. The chapter includes the searching investigations of Barany and others on the subject, and a careful description of the operative interference for suppuration of the labyrinth.

With the necessary changes which have been made in the text, several new plates have been added. One shows the completed mastoid operation, another the completed radical operation, and a third plate gives a view of the completed operation for acute suppuration of the labyrinth. The present edition should prove as popular as its predecessors.—R. B. S.

The General Field

Street Cleaning by Pneumatic Process.

Dr. Howard S. Anders, of Philadelphia, has recently published a letter in the *Philadelphia Public Ledger* recommending the use of pneumatic appliances for cleaning the streets. In view of the well-established fact that germs of various diseases can be readily located in the dust of the streets, Dr. Anders' suggestion is worth very careful consideration.

The prevailing method of sweeping the streets of most of the American cities, where the practice is carried out at all, is to lightly sprinkle the surface and then get busy with appliances that stir up the dust of the streets from curb to curb, sending a stream of small particles through every open window on the block and making the thoroughfare practically insupportable for pedestrians until the dust particles have gradually settled to the pavement again. This process is not only very expensive but dangerous to the lives of the street-cleaning force as shown by the wide prevalence of tuberculosis among them, and is entirely contrary to the teachings of modern bacteriology and hygiene.

Dr. Anders suggests the use of automobile vacuum cleaners that will gather up the dust with no disturbance and leave the street practically clean after the process is completed.

Add to the cost of the present system of street-cleaning the usual statistics as to the expense to the community in loss of earnings and cost of maintenance of those undoubtedly crippled by present methods, and it makes an unanswerable argument in favor of some better method of street cleaning.

Another correspondent of the same newspaper has called attention to the inconsistency of the physicians of Philadelphia, who complying with the advanced ideas as to the use of rugs and polished floors in their waiting rooms still have the interesting custom prevail among their employes of having these same rugs beaten from the front door steps every morning. This is an item which the physician who desires to square himself with the teachings of modern science will no doubt proceed at once to regulate.

Too Much Railway Surgery.

If the facts associated with the railway tragedies caused by head-on collisions and similar forms of casualty could be properly tabulated, they would show the pressing need of a national law regulating the make-up of passenger trains.

Where an ordinary day coach and combination baggage and smoking car are placed between Pullman cars a head-on collision invariably accomplishes the following result: The heavy Pullman cars smash through the day coaches of lighter construction, and the loss of life among the occupants of the lighter cars constitutes the chief percentage of fatality due to the accident.

It is perfectly logical and consistent that people should pay a higher price for the luxurious appointments of a Pullman car. It is not, however, consistent with the general principles of fairness that should be shown in the operation of a railway system that those who ride in the day coaches should have any lesser degree of safety than their more fortunate fel-

low travelers who are able to pay extra for parlor car service. There should be a national law that will make it compulsory upon the railroads within a reasonable time to provide day coaches on trains carrying Pullman cars that will be of sufficient rigid construction to withstand the impact of the heavy Pullman cars in case of accident.

The loss of life on American railroads is a national scandal and has been for years. A very large reduction in this fatality could be accomplished by having passenger trains made up of cars of uniform strength in withstanding collisions. Considering the enormous volume of traffic, the number of these collisions is in reality remarkably small rather than otherwise, but on the contrary the resulting fatalities are extraordinarily high.

In view of the fact that the usual railway horror is enormously expensive to the railroads themselves, any compulsory law of this nature should not be regarded by them as indicative of any feeling of hostility toward the various roads.

Calling a Spade a Spade.

It is most refreshing to learn from the March 5th issue of the *Survey* that out in the glorious climate of the Pacific Coast a society has been organized to deal with matters venereal, which boldly calls itself the California Association for the Study and Prevention of Syphilis and Gonorrhoea. The association is composed of forty members, one-half of whom are physicians; and a woman, Dr. Frances M. Greene, has been chosen as president. The avowed purposes are to treat venereal diseases as frankly infectious; to habituate the public to hear and speak of them without embarrassment, and thus to drag them into the light, where all men may know and avoid them.

The first public meeting was held in January, and an audience of several hundred men and women listened to addresses by Dr. David Starr Jordan of Stanford University and other prominent men. In conjunction with the assembly was an exhibit, prepared by the Secretary of the State Board of Health. It is interesting to note that no account of the affair appeared in the daily papers, although several reporters were present. One local paper, however, published an account of the meeting.

But a campaign of publicity and education is bound to succeed. There is every reason why venereal diseases should be dealt with in a candid and straightforward manner. All mystery and a world of humbuggery would be swept away by open discussion and timely instruction. Some day, perhaps, young men will know that chastity is compatible with perfect health, and "what every woman knows" will include a knowledge of the significance of venereal disease.—ADDISON W. BAIRD, M.D., New York. (Medical Record.)

And the Doctor Cannot Advertise.

The magazine which secured the exclusive privilege to publish Explorer Peary's narrative of his "dash to the pole" has also been fortunate enough to secure advertising which corroborates to a considerable extent Peary's description of the various articles making up his equipment. It is, of course, a matter of great absorbing interest to a breathless world to know the kind of smoking tobacco which was provided for the expedition as attested by a copy of a letter with Peary's facsimile signature. A million owners of wash tubs will undoubtedly be glad to learn just the exact brand of soap also supplied to the Peary

expedition as vouched for in the same convincing manner. To be sure, according to the explorer's narrative the presence of some two hundred odd dogs, more or less, on shipboard, demonstrated the total inadequacy of any soap supply which could be stowed away in the comparatively narrow limits of the vessel,—still, the sworn and attested proof as to the particular brand of soap is a matter of great scientific interest.

It is said that the stern necessity of hustling for daily bread is responsible for much prevailing ignorance, but it does not seem likely that anyone who ever looks inside the pages of the current newspapers and magazines will be able to escape from acquiring a great deal of information as to the Peary expedition and the particular brands of articles making up his equipment.

To Obviate Nervous Shock.

A convention of bill posters has recently appointed a committee of censors to exercise such influence as it can toward the suppression of the billboard nuisance in its aggravated form with the idea of showing recognition for the protests which have gone up from all parts of the country against this offense.

How much this board of censors may be able to accomplish in restraining the impetuosity of their profession is somewhat in doubt. Perhaps a correspondence course might be established that would cite examples of artistic decorative billboards for the emulation of the somewhat uncultivated "gent" who helps to embellish so many different landscapes.

It might be appropriate to cite as an example of æsthetic delicacy the refined sentiment of the soap manufacturer who left provision in his will that his mausoleum overlooking a great railroad

thoroughfare should be surmounted by a marble facsimile of the cake of soap which had made the designer famous.

The Hired Scapegoat.

In numerous bank scandals which have been ventilated in recent years it has been found that a fond paternal government and a large number of stockholders have been misled by the inaccurate statements issued by the cashiers of the various institutions; and this form of inaccuracy being a penal offense, the officers involved have frequently served their various terms in the penitentiary. In the majority of these cases, however, it has been perfectly apparent to people concerned in the investigations that others higher up in the bank management were really responsible for the irregularities, but could not technically be brought to justice.

During the second term of President Roosevelt, the confidential correspondence of a prominent railway official was published far and wide in the newspapers, the official disclaiming any personal responsibility, however, placing the blame upon a subordinate.

Recently, a pool formed to bolster up the market value of the stock of a certain railroad suddenly collapsed through the apparent treachery of most of the parties to the agreement who could not withstand the temptation to take advantage of the fictitious values secured by many months of manipulation, with the result that numerous innocent and confiding stockbrokers were heavy losers. One of the most conspicuous members of this pool has been invited on several occasions to explain his connection with the proceedings, which were even too much for Wall Street to swallow, and as might have been expected he has placed the blame squarely

on some irresponsible office clerk in his establishment.

Years ago, most of the silver-tongued orators were engaged in discussing the political destinies of the country, but more recently the exercise of the silver-tongued accomplishment seems to be devoted to the bamboozling of investors. No kind of ability commands a higher price at present.

There is something inspiring in the spectacle of an advocate eloquently pleading the case of a client who had been called to the bar of justice, but when the same torrent of eloquence is directed to the purpose of casting a spell upon a prospective investor it somehow produces a different impression.

Owing to the rapid acquirement of wisdom by the investing public the floating of dubious enterprises is said to be much more difficult than formerly. There seems to be a rapidly growing sentiment that the only safe investment is in enterprises the details of which are in no way mysterious or dependent upon the personality of a silver-tongued promoter, for if anything goes wrong the legal responsibility is usually traceable to the hired scapegoat.

Bacteria on Our Paper Currency.

Representative Wiley of New Jersey, recently requested that a dollar bill be microscopically examined with a view of ascertaining the degree of infection by bacteria. It was officially announced that as a result of this investigation 92,000,000 germs had been located on that individual one dollar bill. Which is a good many germs for a lady to carry about in her hand-bag, or the moist-handed little girl to carry on an errand to the corner grocery store.

There is something ridiculous in the

usual congressional liberality as compared with that automatic spasm of economy always manifested when the question is raised as to providing for the rapid issuance of clean money to the public in general.

There seems to be a probability that this matter will be rectified. The appearance of much of the paper money of small denominations which circulates throughout the more remote districts is a disgrace to any civilized or half-civilized country, not to mention the richest country on the globe.

The one dollar bill is the favorite medium of exchange and it should be re-issued long before it has acquired even a small percentage of the 92,000,000 germs recently rounded up by Congressman Wiley.

A considerable part of the credit for the present agitation for clean money is due to Mr. A. Cressy Morrison of Chicago, whose efforts in that direction have been recently summed up by the *Literary Digest*.

Florida.

The only events in the history of land development in the United States that are comparable with the tremendous growth that is going on at the present time in Florida, and especially in the Tampa Bay region, which embraces particularly the counties of Hillsboro and Manatee, are Southern California in the early days of the discovery of gold, certain periods in the settlement of Kansas and the growth of Chicago, Denver and Los Angeles and surrounding towns and regions. Several years since, a Governor of Texas in a public address made the statement that "the water is not yet dry upon the wheels of the emigrant wagon just leaving the Red River and starting into the boundless lands of Texas before

another one has entered the river upon the northern side bound in the same direction," but even the rapid growth of Texas was not equal to the development the past few years have witnessed in Florida, and the coming census will be a revelation to those people who still cling to the old idea that Florida is a region of swamps, peopled by alligators, moccasin snakes and semi-savages.

In 1884, when the railroad struck Tampa there were 1200 inhabitants. In '90, at which time the writer saw it for the first time, the census gave a population of a little over 5000. To-day it is claimed that within five miles of the City Hall in Tampa there are 60,000 people, while at the great rate the cigar industries are increasing in Tampa, within the next five years it will be the largest producer in money values of cigars of any city in the whole world.

Oranges and grapefruit from Florida bring an advance price in the market over any other product in the world.

The most spectacular railway that has yet been constructed is nearing completion along its eastern shore. A record of \$250,000 profit is said to have been made during the past twelve months from one of its grapefruit groves. Lands that five years ago could have been bought for \$5 per acre or less have, during the past season, produced from \$500 to \$2100 per acre for one crop of celery. Villages and cities are springing up where, but a few years ago, the palmetto and the pine and the camp of the "turpentine" only existed. Northern people are finding that five acres in Florida properly cultivated means comfort and plenty with less hard labor and anxiety than is experienced by the owner of the best 100-acre farm in the North.

The "Land of Manatee" advertised by the Seaboard Air Line, which enterpris-

ing company is with far-seeing sagacity encouraging in every possible way the colonization of the lands along its line and rendering every assistance to the colonists, is becoming a household word in hundreds of thousands of homes in the North. A duplication of the marvelous history of the Pinellas Peninsula during the past ten years and at present is now commencing in a similar way in this wonderful Manatee region. A generation ago few people thought of having winter homes in the South. True, the birds flew at the beginning of each cold season over our heads toward the sunny climes in the South, returning again to the northern regions for the summer season, but people were oblivious to the lesson thus taught, save here and there one; but the example of those few, the success that it brought to them, the prolongation of life, the maintenance or re-establishment of health, the beneficent returns in many ways, have proven a lesson which has been rapidly learned, until now thousands and tens of thousands of people are establishing homes in the South, where they reside portions of the year, and at the same time are retaining their northern homes and farms as well.

The day is not far distant when every road in the South will be a double track if not a four-track, and when the transferral of population from season to season will be counted, not as at present by the tens of thousands but by the hundreds of thousands.

Avalon—The Atlantic Coast's Most Enticing Proposition.

Of course, as publishers, we would like to take to ourselves the credit for the rapid development that is going on at Avalon and the large number of physicians who are arranging for summer homes there. Whether the owners of

this remarkable property would be willing to give us entire credit for it, is doubtful, as they claim—and it must be admitted—that the proposition of itself is perhaps the most remarkable and liberal in its inducements that has been offered on the Atlantic Coast.

A few years ago, the larger share of the Jersey Coast was a wilderness and settlements were few and far between. A short generation has witnessed a complete change, and it does not need unusual powers of calculation to recognize that within the next few years it will be a matter far more difficult and exceedingly more expensive to own a home on the Atlantic Coast than at present. This being the case, there is no doubt that those who are purchasing on the Atlantic Coast to-day are investing wisely, not only from the standpoint of health and pleasure, but from the financial side as well.

Some very attractive literature is being issued by the Avalon Development Company and is well worth the careful consideration of everyone who hopes some time or other to have a home by the sea.

Far-Seeing Railroad Enterprises.

Who would have thought ten years ago that railroads would be issuing booklets and circulars of information, as for instance the Seaboard Air Line is doing to-day with reference to the section of Florida reached by its road, and which has resulted in its booklet, "The Land of Manatee," which is bringing thousands of families to settle along its lines? And yet, such advertising is the soundest of good policy, for it is the prosperity of a region and its building up which means more passengers and more freight to its

transportation lines, and every new family is an addition to its revenues.

This is not peculiar to the Seaboard Air Line alone; in the long-settled regions such as those traversed by the New York Central and other lines this work is going on. Abandoned farms have been bought by the railroads and are being brought into scientific up-to-date cultivation, and the results of that cultivation are disseminated for the benefit of the owners of similar properties along the lines with the idea of building up their passenger and freight business. If this is feasible on lands that have been long cultivated and have been even considered as worn out, how much more must it mean in virgin regions where all the resources of nature yet remain untouched, as in the wonderful Tampa Bay region, and particularly the section described in the publication referred to, "The Land of Manatee."

In conversation with an official of the St. Petersburg Transportation Company, which plies between the Manatee River and Tampa, the writer was informed a few days ago that during the month of March their line alone had carried over 28,000 crates of fruit and vegetables, showing what this region is doing toward keeping up the balance between production and consumption, and yet all of this business comes from a region that a few years ago was absolutely undeveloped. The prediction was made, and we believe it to be a reasonable one, that within the next five years a half-million crates of fruit and vegetables would be annually shipped northward from the one county, "The Land of Manatee," alone. It would seem as if our age as well as the biblical period has also its "land of milk and honey."

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Original Articles

THE PATHOLOGY AND DIAGNOSIS OF PSYCHONEUROSIS.*

By BORIS SIDIS, M.A., Ph.D., M.D.,

Medical Director, Sidis Psychotherapeutic Institute,
PORTSMOUTH, NEW HAMPSHIRE.

No one can do real good work in psychotherapeutics without a working knowledge of psychopathology, just as one cannot be a good physician without a knowledge of anatomy, physiology, and especially pathology. We must remember that in the theory and practice of bodily diseases the therapeutics is based on a knowledge of the pathological condition of the patient. *The diagnosis is the essential thing.* Without a correct diagnosis no rational treatment is possible, but rational psychotherapy is based on scientific psychopathology. The general practitioner cannot become a psychopathologist, still less a psychotherapist, without a thorough study of abnormal mental life and a long training in the treatment of cases of psychoneurosis, just as he cannot become a surgeon or a neurologist without study, training and skill. The general practitioner is not expected to be a specialist, but he should learn to diagnose in a general way a case of psychoneurosis or a functional nervous condition just as he should be able to diagnose a case of appendicitis or of tabes without being a surgeon or a neurologist, and should know how to examine a urine for albuminuria or glycosuria, make a blood count, and identify nucleated red cells and megaloblasts in pernicious anæmia without being a physiological chemist or pathologist.

It is unfortunate that the training of the physician in our medical schools is rather deficient. The methods studied in our schools are entirely objective, while the subjective methods, which are extremely important in mental, psychopathic or psychoneurotic cases, are not as yet included in our medical curriculum. In his clinical work the student is taught inspection, palpation, auscultation, percussion, how to stain a pathological specimen, to examine stomach-

* Read before the Brookline Medical Club, Brookline, Mass., Feb. 8, 1910.

contents by chemical reagents and with the microscope, to find a Widal reaction in a case of typhoid fever, to look for tubercle bacilli in the sputum, for Klebs-Löffler bacilli in diphtheria, or for the plasmodium in the case of malaria. Such objective procedures cannot from their very nature be employed in the case of mental troubles. Ideas cannot be subjected to chemical reagents, nor can obsessions, hallucinations and delusions be stained and placed for inspection under a microscope. Hence the physician with all his long training in our American medical schools is helpless in all cases of psychoneuroses, both in theory and practice. He is forced to fall back on drugs and other mechanical treatment without even as much as correctly diagnosing his case. The result is disastrous both to patient and physician. The patient goes to some ignorant Christian Scientist or superstitious mental healer.

In European countries psychopathological work is now fully recognized by the medical profession as a necessary part of their medical studies, and we have such men as Janet, Raymond, Babinski, Ziehen, Mendel, Kraepelin, Freud, Breuer, Jung, Bleuler, Bechterew, and many others, who train the medical student in the diagnosis of psychoneurosis.

In spite of the great amount of research work that has been done in this country by a small group of men, the American general practitioner still thinks that psychotherapy belongs to the domain of the church, to Christian Science, mental healing, Dowieism, Schlatterism, or other occult religious cults which are a disgrace to civilized humanity.

In the investigation of psychoneuroses the psychopathologist finds a strikingly characteristic pathological condition in each individual case. The symptoms are not isolated, they are not the results merely of nervousness, as is usually and superficially explained both by the laity and the physician. The symptoms of a psychoneurotic case are not accidental, but are intimately related and are in each case due to one underlying pathological state. The symptom-complex is grouped round a pathological nucleus which controls and guides the morbid manifestations. Success in the treatment of a case of psychoneurosis depends on the ability to get at that pathological nucleus and have it disintegrated. Unless this is done the psychotherapeutic treatment is either ineffective or is but a temporary makeshift; it does not really cure, but only helps to cover temporarily a pathological focus. We must always attempt to get at the central pathological condition out of which all the morbid manifestations arise. Thus in a well developed case of psychoneurosis the dizziness, the faintness, the nausea, the indigestion, the hemicrania, anæsthesia, and hyperæsthesia, the fatigue, the abulia, insomnia, and general depression bear severally a definite relation to some pathological focus, which the psychopathologist must find by a searching examination before an effective psychotherapeutic treatment can be undertaken.

This pathological focus underlying the total morbid symptom-complex can be proven by various methods to be *detached*, or as it is termed, *dissociated*, from the patient's normal mental life. In the course of time, if it persists and keeps on growing and proliferating, it may become organized into a parasitic cancerous growth sapping the vital energies of the normal personality.

This parasitism is well brought out in the attitude of the patient towards those morbid manifestations. He regards the whole symptom-complex as foreign to his personality. "When the attack is on," one patient tells me, "I am conscious of everything, and still I have no control." "Something has happened," says another patient, "over which I have no control." "What a fool I am to be troubled by such nonsense; but I cannot help it when it comes."

Another important characteristic is the *periodicity* of remissions in the appearance of the morbid system. The attacks of functioning of the dissociated morbid system run in cycles. During the attack the mind works in a circle. This is a very important pathognomonic symptom of psychoneurosis: *cyclical* and *circular* mental movements. The attack itself is usually sharp and brief in duration and is followed by a long period of depression and worry. It is like a controlling nucleus embedded in a mass of nourishing cytoplasm. *Acute sensory attacks with long intervals of brooding are pathognomonic of psychoneurosis.* This brooding, of course, may be conscious or subconscious, but it is there, and it is of the utmost consequence for the psychopathologist to uncover it, if he wishes to diagnose the case scientifically and introduce a rational therapeutic treatment.

In most, if not in all cases of psychoneurosis, the origin of the attack or of the obsession is unknown to the patient. The original pathological focus escapes the patient's knowledge just as it is often beyond the grasp of the practicing physician. There is a strong active pathological mental focus in the patient's mind and brain, but he is not directly conscious of it. In order to come to that pathological focus and clean it out, the patient's subconsciousness must be skillfully and thoroughly tapped. This *subconscious* aspect is one of the most important pathognomonic symptoms of psychoneurosis. It is of great importance in differential diagnosis. If it can be shown that the lost function or affected organ is active *subconsciously*, then *the affection is a psychoneurosis.* A further diagnostic point is the *overactivity of the stimulated subconscious function.* Thus *psychoneurotic anaesthesia, amnesia, is also hyperaesthesia and hypermnnesia.* In functional diseases *all losses of functions are also subconscious gains.*

Another symptom well worth knowing in the diagnosis of psychoneurosis is the *sudden onset* of the attack. The morbid mental state flashes lightning-like on the patient's mind, keeps him spell-bound in terror for a brief period, sometimes but a few moments, like a *petit mal* of epilepsy, and then disappears as mysteriously as it came, to reappear on some other favorable occasion. *These occasions are not accidental; they have a definite causal relation to the attacks.* Other states persist in consciousness for some time, but even in such cases periodicity of remissions is quite marked. This characteristic of periodicity is so pronounced that some writers describe such cases by the term "psychoplepsy," while others classify them under the misused term of "psychic epilepsy." In order that there should be no confusion with epileptic states I describe these morbid states as *recurrent psychomotor states*.¹

¹ Sidis: "Studies in Psychopathology," The Boston Medical and Surgical Journal, 1907, 1909.

These states do not belong to the patient's normal associative life, but appear to the patient himself as opposed to his usual normal life-activities. They appear to him as dissociated from the rest of his interests, from the rest of his associations and psychomotor adjustments. He does not understand these dissociated states, wants to extrude them from his mind. Under certain conditions he is not even aware of them, since they either appear subconsciously, or swamp his personality during the whole period of their activity. The states are essentially subconscious, dissociated states; they come in attacks, in seizures, and manifest themselves, like volcanic upheavals, with extraordinary violence and emotional disturbances. As pointed out in former works: "One general characteristic of these morbid psychomotor states is the fact of their recurrence with the same content of consciousness and with the same, almost invariable psychomotor reactions. The patient thinks, feels, wills and acts in the same way. Subconscious dissociated states belong to the type of recurrent moment-consciousness,—a type characteristic of the lower forms of animal life, a type that responds to the external environment with the same adjustments, with the same psychomotor reactions. From this standpoint we may regard the recurrent psychomotor states as a reversion to lower forms of consciousness. The suddenness of the attack, the uniformity of the manifestations of the symptom-complex, the uncontrollable, overpowering effect on the patient's personal consciousness are all due to the same underlying condition,—the dissociation of the patient's subconsciousness."

The nature of the subconsciousness, whether it be physiological or psychological, or both, we may leave to the speculations of the philosophical psychopathologist and metaphysical psychologist. Our present object is to note the clinical facts, describe them accurately, correlate them into generalizations, and use provisionally limiting concepts much in the same way as the mathematician uses space or the physicist uses matter and ether: By the term subconscious we simply indicate this fact of dissociative activities characterized by their recurrence and automatism, of which the person is often not directly cognizant.

During the predominance of the recurrent states, the sense of reality is affected, since the subconscious or dissociated mental states come with an insistency and intensity of the sense of their reality almost directly proportional to the insistency of the recurrent mental state which is truly delusional or even hallucinatory in character. This is especially true of the highly developed and fully systematized *complex* recurrent mental states. This sense of reality is still more enhanced by the suddenness and violence of the subconscious eruption.

The attacks can be traced to mental trauma, emotional shocks, and especially to experiences of early childhood. This generalization was developed in full in my various works and especially in my "Studies in Psychopathology." These subconscious experiences of early childhood are not based on sexual trauma, as claimed by some German psychopathologists and their enthusiastic adherents.² Where present the early sexual experiences can be shown to be ineffective and unessential.

² "Die Theorie behauptet mit ausschliessender Sicherheit (?), das es nur sexuelle Wünschregungen aus dem Infantilen sein können, welche in den Entwicklungsperioden

Feldsmann, in a paper published in the Russian journal, *Sovremennaja Psychiatria*, and I also in my own work, find that early sexual trauma is on the one hand present in many healthy individuals and on the other hand absent in many cases of psychoneurosis. Sexual experiences may become exaggerated in the patient's mind by the suggestive importance ascribed to them by Freud, Stoeckel and their followers.

The following case may be presented as an instance of mental trauma:—

CASE I.—M. L. is nineteen years of age, of a rather limited intelligence. He works as a shopboy amidst surroundings of poverty and leads a hard life, full of privations. He is undersized and underfed, and looks as if he had never had enough to eat. Born in New York, of parents belonging to the lowest social strata, he was treated with severity and even brutality. The patient has never been to any elementary school and can neither read nor write. His mathematical knowledge does not extend beyond hundreds; he can hardly accomplish a simple addition and subtraction and has no idea of the multiplication table. The names of the President and of a few Tammany politicians constitute all his knowledge of the history of the United States, the meaning of which is beyond his comprehension.

Family history is negative, as his parents died when the patient was very young, and he was left without kith and kin, so that no data could possibly be obtained.

Physical examination is negative. Field of vision is normal. There are no sensory disturbances. The process of perception is normal, and so also is recognition. Memory for past and present events is good. His power of reasoning is quite limited and the whole of his mental life is undeveloped, embryonic. His sleep is sound; he dreams little, but wets his bed since childhood. Digestion is excellent; he can digest anything in the way of eatables. He is of an easy-going, even gay disposition, a New York "street arab."

The patient complains of "shaking spells." The attack sets in with tremor of all the extremities and then spreads to the whole body. The tremor becomes general and the patient is seized by a convulsion of shivering and trembling

der Kindheit die Verdrängung (Affectverwandung) erfahren haben, in späteren Entwicklungsperioden dann einer Erneuerung fähig sind, sei es in folge der sexuelle Konstitution, die sich ja aus der ursprünglichen Bisexualität herausbildet, sei es in folge ungünstiger Einflüsse des sexuellen Lebens, und die somit die Triebkräfte für alle psychoneurotische Symptombildung abgeben." (S. Freud, "Die Traumdeutung," p. 376, zweite Auflage 1909.) In other words, slippery and mutable as Freud's statements are, he clearly declares in the last edition of his *magnum opus* the far-reaching generalization that all psychoneurosis is based on sexual wish-impulses (Wünschregungen) coming from infantile life. Suppression of sexual experiences can be easily observed (by competent observers, of course,) in infants a few months old. If you miss the process of suppression in the baby, you can easily trace it by means of psycho-analysis to the early recollections of tender infancy. It is certainly lack of comprehension that induces Ziehen to dub Freud's speculations as Unsinn. Some of Freud's admirers with a metaphysical proclivity are delighted over the theory of suppressed wishes. The wish is fundamental and prior to all mental states. This piece of metaphysical psychologism is supposed to be based on clinical experience. If wishes were horses, beggars would ride. The Freudist manages to ride such horses.

and chattering of teeth. Sometimes he falls down, shivering, trembling and shaking all over. The seizure seems to be epileptiform, but it lasts sometimes for more than three hours. The attack may come any time during the day, but is more frequent at night. During the attack the patient does not lose consciousness, he knows everything that is taking place around him, and can feel everything pretty well; his teeth chatter violently, he trembles and shivers all over and is helpless to do anything. There is also a feeling of chilliness, as if he were possessed by an attack of "ague." The seizure does not start with any numbness of the extremities, nor is there any anæsthesia or paræsthesia during the whole course of the attack. With the exception of the shivers and chills the patient claims he feels "all right."

The psychopathology of the case can be traced by means of the hypnoidal state, a special subconscious state widely different from that of hypnosis. The hypnoidal state is an atavistic state present in the lower animals as the primitive state out of which sleep proper as well as other subconscious states have subsequently developed. This hypnoidal state was first described by me some fourteen years ago in my work "The Psychology of Suggestion," and was developed further in my other works, and especially in my experimental work on "sleep," carried out on man and the lower animals. Many investigators now work with the hypnoidal state in their psychopathological investigations as well as in their psychotherapeutic work.

The patient, then, was put into a deep hypnoidal condition. There was some catalepsy of a very transient character, but no suggestibility of the hypnotic type. Now in this hypnoidal state it came to light that the patient "many years ago" had been forced to sleep in a dark, damp cellar where it was bitterly cold. The few nights passed in that cold cellar he had to leave his bed, and shaking and trembling and shivering and chattering with cold he had to go to urinate, fearing to wet his bed in expectation of a severe punishment. The patient, while in that intermediary, subwaking, hypnoidal state, was told to think of that dark, damp, cold cellar. Suddenly the attack set in,—the patient began to shake and shiver and tremble all over, his teeth chattering, as if suffering from great cold. The attack was thus reproduced in the hypnoidal state. "This is the way I have them," he said. During this attack no numbness, no sensory disturbances were present. The patient was quieted, and after a little while the attack of shivering and cold disappeared. Now the room in which the patient was put into the hypnoidal state was very dark, and accidentally the remark was dropped that the room was too dark to see anything; immediately the attack reappeared in all its violence. It was found later that it was sufficient to mention the words "dark, damp and cold" to bring on an attack even in the fully waking state. We could thus reproduce the attacks at will,—those magic words had the power to release the pent-up subconscious forces and throw the patient into convulsions of shakings and shiverings, with the sensation of cold and chattering of the teeth.

Thus the apparent epileptiform seizures, the insistent psychomotor states of seemingly unaccountable origin, were traced to dissociated systems of a disaggregated subconsciousness.

(To be concluded in *The June issue*.)

MICROSCOPIC CRYSTALLIZATION AND ITS APPLICATION TO CHEMISTRY AND THERAPEUTICS.

By HARRY J. NOVACK, M.D.,
PHILADELPHIA.

THE importance of the subject of crystallization and crystalline substances will at once be appreciated when it is observed that by far the greater number of chemical substances, including therapeutic agents, either exist in Nature as crystals or may be crystallized. The subject under consideration does not treat of the geometrical and mathematical problems involved in the science of crystallography, but is more of a record of observations made in the microscopic study of crystals in a general way. There is no doubt that even with reference to crystallography the phenomena observed may prove to be of great value. It is here intended to bring into notice the existence of a so-called primary crystalline particle or gross molecule, which may be considered the only visible universal unit of matter,—the atom and molecule being as yet invisible. From these gross molecules primary crystals are developed, which are characteristic for the various substances and admit of differentiation, thus proving of value in the study of chemistry and therapeutics, in a way similar to histology in the study of bodily functions. Since as little as one five-thousandth of a grain of a crystalline substance dissolved in a drop of water offers sufficient material for the study of that particular material, recognition of various substances in minute quantities by means of the microscope, instead of by delicate and tedious chemical tests, would prove both valuable and certain, at least as an adjunct to the chemical tests.

It might be anticipated that when cohesion slowly recovers its ascendancy, this force would exert itself equally in all directions throughout the mass and that a globular concretion would be the result. The fact, however, is quite otherwise, for as a general rule cohesion is not exerted equally in all directions in solids. In the majority of instances, where solid bodies are allowed to separate slowly from their solutions, they are found to assume regular geometrical forms. This tendency is much stronger in some substances than in others and it varies widely in the same substance under different physical conditions. Each substance has its own peculiar form. Such regular geometrical solids are termed crystals.

By these differences in form, the materials which constitute the crystallized mass may often be distinguished from each other. For example, common salt crystallizes in cubes, alum in octahedra, saltpeter or niter in six-sided prisms, etc. The usual method of obtaining crystals is to form a strong solution of the salt in hot water; as the liquid cools, the cohesion of the salt resumes its ascendancy, and the crystals shoot through the liquid.

The regular external form of a crystal is its most striking feature, and the only one that, for a long time, was regarded as essential. But we now know that this form is only an outward expression of a regular internal structure.

The powers that are active in the formation of crystals and their mode of formation have been favorite subjects of speculation by past writers on crystallography. Not much progress has been made in this direction, although crystals may still be seen, as in time past, springing out of the solution under the microscope, and continuing to increase in size. The minutest crystals are still seen to be regularly bounded forms. Despite these facts we are fully aware that the regular external form of the crystal is only an outward expression of some primary or fundamental formation upon which its structure depends.

Upon microscopic study of a variety of crystals, there are revealed some highly interesting and important phenomena and principles relating to crystallization. The various substances under experimentation were all reduced to a common, initial or fundamental form, the *primary crystalline particles* or *gross molecules*, in contradistinction to the actual or real molecules of the substance. Each of these particles or gross molecules appears under the microscope as a very minute circle, about one forty-thousandth of an inch in diameter, and is equivalent in weight to one-trillionth and as low as one five-trillionth of a grain of matter, depending upon the substance from which it is derived. The exact shape of the particles would be difficult to determine, since the image of a very minute object of any shape appears as a tiny circle, no matter how good the microscope may be. But whatever their exact shape is, the development of crystals can be visibly traced from them; hence they fully deserve to be called the primary or fundamental crystalline particles or even gross molecules.

The technique employed is quite simple, observations being made either while the crystalline substance is in solution or in the dry state. No high temperatures are employed, all examinations being made between 16 and 20 degrees centigrade. A one-twelfth inch oil immersion lens is used, without the aid either of cover slides or of cedar oil. For the wet method, from one-half to two grains of the substance is dissolved in one fluidounce of water. A drop of the solution is placed on a concave or flat slide and observations made. For the dry method, from one-tenth to one grain of the substance is dissolved in one ounce of water. A small drop is placed on a flat glass slide and when the water has evaporated, it is ready for study. Stronger solutions than from one-tenth to one grain to the ounce of water, for dry examination, are productive of poor or negative results. Only a chemically pure sterile water should be used in making solutions.

When solutions are studied, for example those made by dissolving in one ounce of water a half grain or more either of bichloride of mercury, gold chloride, platinum chloride or copper acetate, the primary or fundamental crystalline particle or gross molecule already spoken of first becomes visible out of the clear solution as a very faint speck the size of a pin-point, measuring about one one-seventy-thousandth of an inch in diameter. Most characteristic is the fact that it displays very decided activity, which at first can easily be discerned as a rapid rotary movement, finally becoming irregular. It would be difficult to distinguish these moving particles from various living organisms of a low order. This motion is entirely different from and should not be likened

to the so-called molecular motion,—a dancing motion of fine granules in fluids, occurring in the protoplasm of the salivary corpuscles, dead, swollen leukocytes, and also in granules of India ink-suspended in a fluid,—which is really not an active motion. While revolving, this particle traverses distance as well. Motion continues for quite a length of time, varying with different substances. In some substances the particles appear sooner and in greater numbers than in others. As motion continues, the particle gradually increases in size to about one forty-thousandth of an inch in diameter, eventually falling to the bottom of the field under observation, where its motion ceases.

It is interesting to observe that these particles possess the power of attraction and repulsion for each other. Rarely does any particle exist individually for any length of time without combining with at least one other similar particle. Even after two or more have become attached motion may continue, but it is now of an irregular character instead of rotary. A particle which has already attached itself to several others may suddenly be seen to tear itself away from its position and dart across a distance, to become attached to another particle or system of particles whose attraction is greater. On several occasions, while studying a solution of iodine in water, a combination of two or more particles would be seen to display motional phenomena with reference to another separate particle, simulating closely the phagocytic action of the leukocyte or white blood cell. The combination of particles would first encircle the small single particle and, in doing so, separate into two distinct parts, which would unite at the ends, or, by turning back to their former position, unite at the point of fission. This cycle may be repeated again and again, the combination of particles breaking at different points and uniting again, until the small particle is absorbed.

In short, the first visible trace of crystallization is the formation of a very minute particle, which displays the phenomenon of definite motion; has the power of attraction and repulsion; usually combines with or attaches itself to one or more similar particles; and continues to increase in size by the accumulation while in motion of additional actual molecules, until it has become so heavy as to fall to the bottom of the solution.

Theoretically, and judging from the phenomena of the gross molecules, all the actual molecules of a crystalline substance in solution must be in a state of constant rapid revolution, with attraction powers of some greater than of others. As crystallization begins, the actual molecules, by attraction, develop into gross molecules or crystalline particles, which continue to display the activity of the actual or chemical molecules from which they were formed.

After the particles fall to the bottom and cease their active motion, arrangement sets in, and attraction occurs between them in regular forms and lines, thus forming crystals. The gross molecules or primary particles seem to have several points of attraction at which other particles may become attached. In some substances, wherein the force of crystallization is very powerful, the so-called points of attraction may be satiated or filled in by the rapid formation of gross molecules directly from the actual molecules, instead of by the

attraction of separate or individual gross molecules, thereby seeming to spring up at once into a complete minute crystal.

Upon examination of the primary particles in a dry or fixed state, direct active motion is not observed, although the power of arrangement and crystallization which necessitates motion is latent within them, and the addition of a very trivial amount of moisture by means of blowing air from the lungs upon them will produce the arrangement in proper geometrical forms or crystals. A solution of one-tenth of a grain of copper acetate, potassium nitrate or platinum chloride in one ounce of water, or one-half grain of bichloride of mercury, gold chloride or potassium chlorate in a similar amount of water, is quite sufficient. A small drop is placed on a thoroughly cleaned glass slide, and gentle heat may be applied to facilitate evaporation. The slide so prepared should then be immediately placed under the microscope for examination. At first a great number of the so-called primary crystalline particles will be seen, some single and some already joined to one or more other similar particles, but later, they will be seen to have arranged themselves in regular lines and figures. A number of the particles appear denser than others, but this is due to the fact that some double ones, with the two particles placed one directly above another, appear single as they are viewed from above. Very few exist singly for any length of time, but by higher dilution more individual particles will be noticed, especially when evaporation is rapidly produced by heating, thus retarding the crystalline particles from combining as they do in slow evaporation. Even a slide so prepared will after a short time show arrangement, due to gradual attraction between the particles. It therefore becomes possible, by inhibition and retardation of the force of crystallization, to trace and differentiate the various stages in the development or growth of crystals from the primary crystalline particle.

In order that a more lucid conception of the subject may be obtained, a study of the following illustrations, reproduced directly from the microscope, will prove of value. The substances illustrated are but a few of a vast number which yielded similar results. The various figures represent the successive stages in the development of some simple crystals. Any or all of the stages may appear within a single microscopic field. The separate stages are as follows:—

First, the development of the primary crystalline particles or gross molecules from the actual molecules of the solution.

Second, the formation of pairs from the union of two primary particles.

Third, a faint appearance or tendency towards arrangement in lines and shapes.

Fourth, closer attraction and definite arrangement, the separate particles still being visible; semi-fusion.

Fifth, complete fusion, after which all lines of demarcation and traces of the individual particles are obliterated, thus forming a complete crystal.

As soon as attraction between the particles and arrangement are manifested, a clear area containing fewer or no particles becomes noticeable in the vicinity of the crystal in formation or formed crystal.

In the first set of illustrations (those of copper acetate), the five separate stages are represented. Since the first and second stages are common to all substances, only the third, fourth, and fifth are shown in the illustrations succeeding copper acetate.

Copper acetate offers good opportunities for the study of the formation of crystals in its various stages. A quarter of a grain of this substance is dissolved in one ounce of water. One minim of the solution, after evaporation, will cover almost one square inch of surface on the glass slide with primary particles, each measuring almost one forty-thousandth of an inch in diameter. There are as many as five trillion crystalline particles or gross molecules in one grain of this substance.

COPPER ACETATE.

Fig. 1

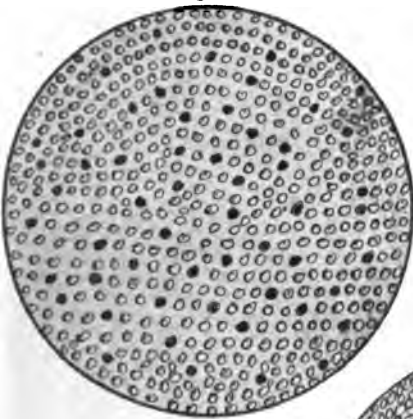


Fig. 2

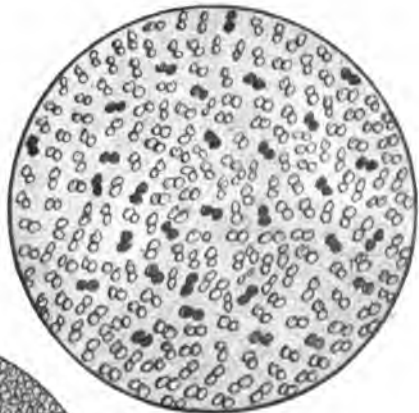


Fig. 3

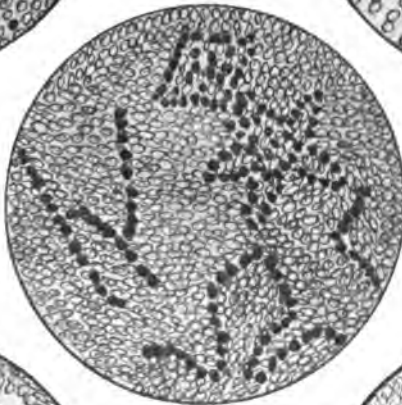


Fig. 4



Fig. 5

MERCURIC CHLORIDE

Fig. 1

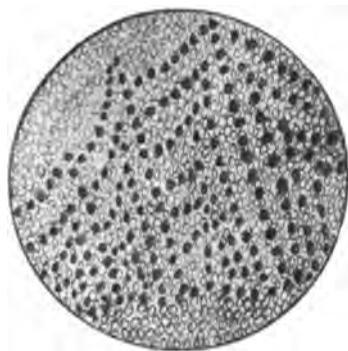


Fig. 2



Fig. 3



OXALIC ACID

Fig. 1

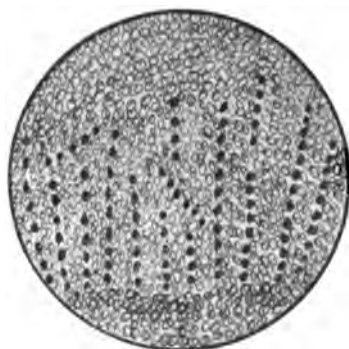


Fig. 2



Fig. 3



"PURE" WATER

Fig. 1



Fig. 2



Fig. 3



GOLD CHLORIDE

Fig. 1

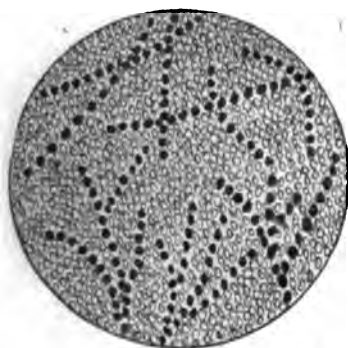


Fig. 2

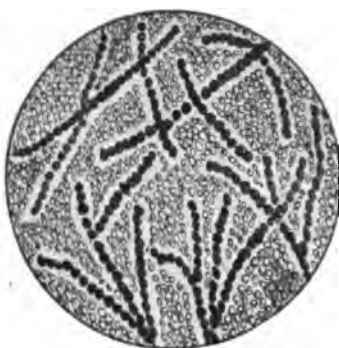


Fig. 3



POTASSIUM CHLORATE

Fig. 1

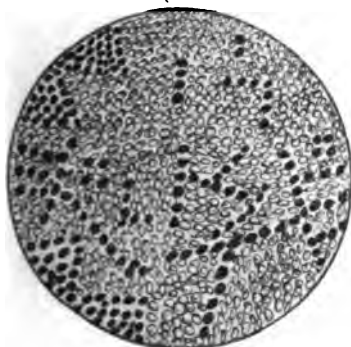


Fig. 2



Fig. 3



SODIUM ARSENITE

Fig. 1

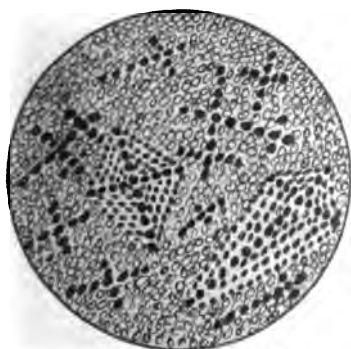


Fig. 2



Fig. 3



SILVER NITRATE

Fig. 1

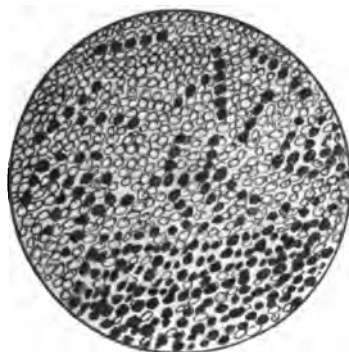


Fig. 2



Fig. 3



PLATINUM CHLORIDE

Fig. 1

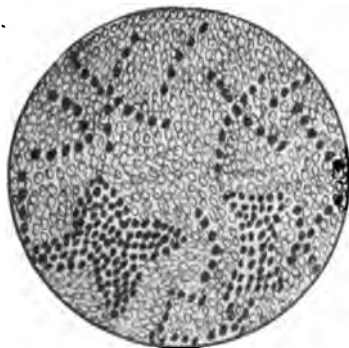


Fig. 2



Fig. 3



AMMONIUM MOLYBDATE

Fig. 1

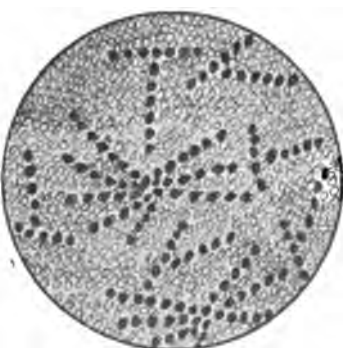


Fig. 2



Fig. 3



POTASSIUM FERRICYANIDE

Fig. 1

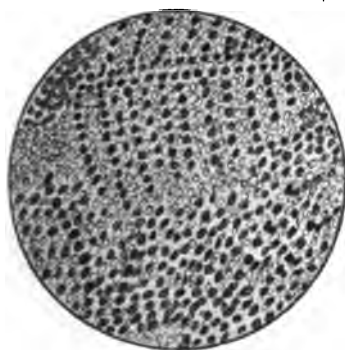


Fig. 2



Fig. 3



POTASSIUM NITRATE

Fig. 1

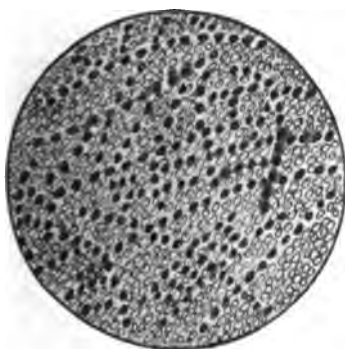


Fig. 2



Fig. 3



POTASSIUM PERMANGANATE

Fig. 1

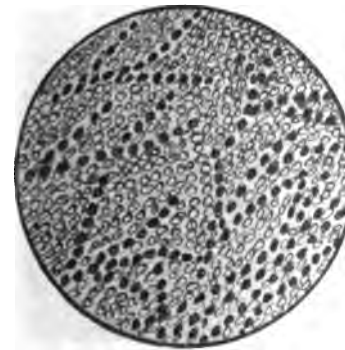


Fig. 2.



Fig. 3



When a drop of gold chloride is examined under the microscope, motion phenomena are clearly observed. A particle may move about and then suddenly attach itself to another. There are about one trillion particles in a grain of this substance. Under dry examination the appearance of Fig. 3, under "Gold Chloride," can be changed repeatedly by breathing upon the field under observation, which at first causes entire disappearance of the field, due to the moisture, this being followed by reappearance of the crystals in different shapes and linear directions.

A more complete study of the subject, in which would be noted the most characteristic forms, lines and angles in which the primary crystalline particles arrange themselves for various substances, would make the subject of microscopic chemistry and therapeutics of great value. It would be possible to recognize very minute amounts of substances, as shown by the slight impurities revealed in a water supposedly purer than that required by the U. S. Pharmacopœia, when placed on a clean slide and, after evaporation, examined under the microscope (*vide* page 268).

It is safe to conclude that just as the atomic arrangement determines the molecule, so the arrangement of the primary crystalline particles or gross molecules determines the shape or form of the crystalline substance.

MODERN VIEWS ON IRREGULAR HEARTBEAT.

By HENRY SEWALL, Ph.D., M.D.,
DENVER, COLO.

(Concluded from April issue.)

TURNING now from the modifications of cardiac rhythm due to variations in conductivity of the Purkinje mechanism, let us inquire into the effects produced by variations in the functions of automaticity and irritability of the cardiac protoplasm. Obviously a change in these characteristics must be followed by a variation in the rhythmicity of the heartbeat.

Even in the normal heart the rate of discharge from the usual site of stimulation, the venous sinus, may vary, and lead to a rhythm in which the diastoles either abruptly or periodically increase and decrease in duration. These variations are frequently dependent upon the respiratory movement. The condition is particularly marked in young people and has been called by Mackenzie the "youthful form of irregularity." It has no pathological significance. In this form of irregularity there seems to be no change of rate in the conduction of the contractile wave through the heart, but there is a lengthening of the diastole due to retardation of the sinus discharges. The effect is doubtless due to variations in the strength of the normal vagal inhibitory tone. Many years ago, following some observations by Ludwig and Luchsinger, I demonstrated, with the assistance of Frank Donaldson, that a very slight increase of inflow of blood in the terrapin's heart very perceptibly lessened the inhibitory control of the vagus nerve over the organ.⁹ It seems altogether

probable that herein is furnished the explanation of the form of irregularity under discussion, at least in so far as it is associated with respiratory movement, for we know that the right auricle is relatively overfilled under the aspiratory influence of every inspiration.

At the beginning of this discussion it was pointed out that the automatic mechanism of the heart, which I have assumed to consist of the embryonic contractile tissue as represented in the Purkinje fibers, is distributed widely through the cardiac muscle, being condensed at various points in plexus-like nodes. Now, you may have inquired why the normal heartbeat is always initiated at the sinus node rather than at some distal portion of the irritable network. I assume that it is a question of the relative irritability of the different points of the mechanism. Erlanger and Blackman¹⁰ have found that in the rabbit the irritability and automaticity of the auricles are distinctly graded throughout the structure. Starting from a point in the sinus where automatism is most rapid and irritability is keenest, these functions were found to have a somewhat definite distribution throughout the remainder of the auricles, apparently becoming gradually more obtuse with departure from the sinus. Experimentation seems to indicate the existence of different anatomical automatic stations possessing graded irritability and connected by conducting strands.

It has long been known that an electric action current of considerable intensity,—a physical expression of the excitatory discharge which develops contractile energy,—sweeps over the heart preceding each systole. Gotch¹¹ has recently shown by means of photographic records from the capillary electrometer that this action current in its simplest course normally proceeds in sequence from the sinus to the base of the ventricles, thence to the apex and finally to the arterial outlets. We are just at the threshold of the diagnostic possibilities of this field of knowledge, but already ample evidence is at hand to show that in the pathological heart the origin and course of the action current are modified by the position and extent of the lesions. The wonderful string galvanometer of Einthoven has made it possible to trace the course of the functional electric variations of the human heart and to establish their alterations in disease. If any peripheral part of the mechanism has its irritability raised above that of the sinus, the discharge producing contraction will originate in that part and run in both directions. It is this fact which gives rise to the most characteristic features of pathologic cardiac irregularity.

There can be no doubt that the fundamental functions of cardiac tissue are directly dependent upon nutrition. The heart stands alone in the economy in the conditions of its intrinsic circulation in that the circulation through its walls depends not so much on the value of the aortic blood-pressure as on the completeness of its self-massage in the alternate phases of systole and diastole.

It is obvious, then, that there may be expected to occur many functional variations of the blood-stream in the walls of the heart which is in trouble, through which now one, now another, part of the organ may be made to suffer from lack of nourishment. The presence of sclerotic tissue, foreign growths or degenerated fibers must permanently localize the effects of imperfect nutrition. Now what would be the functional reaction to such interference with

metabolism? Experiment and observation seem to show that the first effect is an increase of irritability in the affected automatic mechanism, leading to its premature functional discharge. The second effect is, with hardly a doubt, a relatively early exhaustion of the affected part, which is thereby thrown out of commission. That such a sequence can be experimentally produced has recently been shown by Thomas Lewis.¹² He found the rhythm of the dog's heart to be thrown into tachycardia when a certain branch of the coronary artery was clamped. More extensive arterial occlusion caused rapid fibrillary twitching ending in complete asystole.

In the human heart, when the irritability of any part of the automatic mechanism is raised to the discharging point in advance of the normal sinus explosion, a contractile stimulus proceeds from that point in both directions along the conducting tissue. This increase of irritability, which is presumably due to relatively defective nutrition, leads to a premature discharge, and the resulting contraction is known as an "extra-systole." Extra-systoles are supposed to be caused by discharges originating in some part of the automatic mechanism distal to the venous sinus. Their genesis predicates an abnormal exaltation of irritability and therefore more or less organic derangement of the automatic tissue of the heart. The extra-systole may only disturb the normal sinus rhythm at rare intervals, or it may recur regularly after every 1, 2, 3, or 4 beats of the normal rhythm. Following the extra-systole the diastole is usually prolonged beyond the normal in the so-called "compensatory pause." The abnormal contraction is very readily recognized by auscultation, giving rise to two normal heart sounds very close together and usually fainter than normal. The extra-systole usually occurs early in diastole, though it may interrupt any part of the diastolic pause. The abnormal contraction may be so feeble that the aortic valves are not lifted, hence the second sound falls out; frequently the volume of blood ejected by the extra-systole is too small to produce a palpable arterial pulse. At the moment of the extra-systole a vigorous pulsation may swell the root of the jugular vein for reasons that will appear later.

It is generally admitted that extra-systoles may have at least three different sites of origin. They may start in the fibres of Purkinje contained within the ventricles. This so-called ventricular extra-systole is interpolated in the ordinary sinus rhythm, the auricular contractions pursuing their normal course. It is a fact, as might be anticipated, that changes of irritability leading to the production of extra-systoles are also prone to alter the function of conductivity, as is manifested most clearly in an alteration of the length of the *a-c* interval. Moreover, it is easy to conceive that when the energy of the ventricle has been consumed by an abnormally powerful contraction, the organ will be unable to respond to the next normal stimulus reaching it from the auricle because it is still depressed by fatigue. The following ventricular beat will therefore fall out and an intermission be felt in the pulse. The two diagrams here reproduced, somewhat modified, from Mackenzie's book, illustrate very well both the varying effects on the radial pulse and the change of ventricular irritability produced by ventricular extra-systoles. It may be said that the clinician may differentiate between pulse irregularities produced by failure of conduction in the

auriculoventricular bundle and those due to extra-systoles by the fact that the latter may be auscultated, as well as by a comparison of the jugular and arterial pulses.

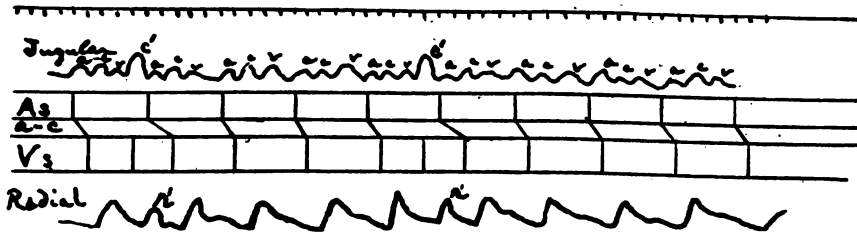


Fig. 2.—Illustrating ventricular extra-systoles (following the first and fifth sinus explosions) and lowered conductivity in the auriculoventricular bundle as shown by the increased *a-c* interval following them. The top line is made by the chronograph, marking intervals of one-fifth second. The second line is a tracing of the jugular pulse. Note the large *a'* wave in the jugular tracing and the small *v'* wave in the radial pulse caused by the extra beat of the ventricle. Following this the auriculoventricular bundle conducts more slowly than usual because still fatigued when the next normal sinus stimulus reaches it. The lengthened *a-c* interval indicates slow auriculoventricular conduction.

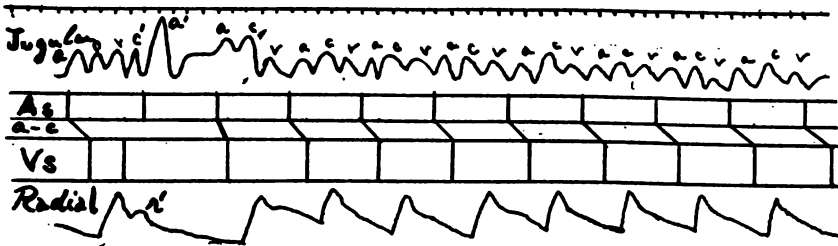


Fig. 3.—A ventricular extra-systole following the first normal contraction. The conditions are the same as in Fig. 2, except that the irritability of the auriculoventricular bundle is still more depressed and the auricular stimulus which succeeds the extra contraction of the ventricle fails to excite the latter, so that a pulse beat falls out. Note the large *a'* wave in the jugular tracing when the auricle acts alone, and also the effect on the radial pulse of the ventricular extra-systole and intermission. Irritability and conductivity are improved after prolonged rest, so that the following *a-c* interval is shortened.

Extra-systoles may be also auricular in origin, starting at some indeterminate part of the auricle, and the interpolated stimulus reaching the ventricle and causing a pulse-beat. After such an abnormal contraction the auricle is fatigued so that the next normal stimulus proceeding from the sinus fails to arouse a response and a prolonged pause in the pulse occurs.

Especially interesting and important is a third form of extra-systole in which, according to some authors, the abnormal stimulus arises at the so-called auriculoventricular node, situated at the auricular end of the auriculoventricular bundle. This point is practically in the center of the automatic tissue of the heart, and a stimulus arising in it might be supposed to reach the sinus

on the one hand and the ventricular apex on the other, at the same moment. This would lead to simultaneous contraction of auricles and ventricles, and, according to Mackenzie, is exactly what happens. What he calls the "nodal rhythm" of the heart is due to a heartbeat in which the irritating stimulus does not come from the sinus, but from the auriculoventricular node. It may give rise to that incurable and usually fatal form of arrhythmia known as the *pulsus irregularis perpetuus*. In the later stages of this condition the auricle is paralyzed by overdistention, and the automatism is taken up by the lower, less competent, auriculoventricular node.

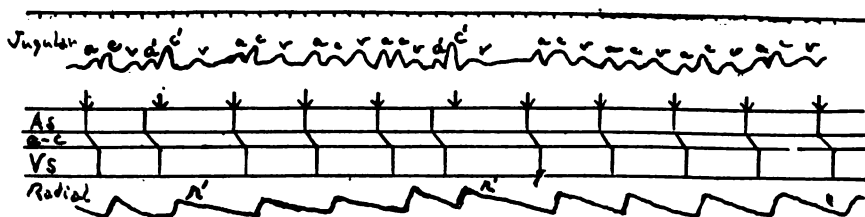


Fig. 4.—Illustrating auricular extra-systoles. The normal sinus discharges are indicated in the diagram by the arrows ↓. After the first and the fifth auricular contractions there is a premature contraction of the auricle followed in due course by ventricular systole. But the irritability of the auricle following the extra-systole is still too depressed by fatigue to respond to the next normal sinus stimulation, so that a beat falls out. (Modified from Mackenzie.)

You must already have asked yourselves "What is the use of all this knowledge, and how can it help you to heal your patients?" It is clear that cardiac irregularities produced by depression of conductivity or the generation of extra-systoles indicate either a profound functional nutritive disorder of the vital automatic tissue or a permanent organic interference with its activity.

There is no necessary danger to life nor even serious deterioration of general health in most cases manifesting extra-systoles and depressed conduction. I am frequently interviewed by a gentleman over 70 years of age, in excellent health, who a year ago offered an interesting example of various forms of extra-systole and of much depressed conduction, and in whom there could be produced at will, apparently, temporary paralysis of the right auricle by simply holding the breath and thus inducing overdistention of the right auricle. In the cases of cardiac arrhythmia under discussion the physician can usually conscientiously assure his patient that he is in no danger. But such a condition of the heart may be of momentous value as indicating a lowered grade of cardiac vitality. The patient must live upon a lower physiological plane. The intensity and duration of physical and mental exertion in which he may safely indulge are reduced.

Such facts as I have presented, then, do not call for a specific treatment of irregular heartbeat, but rather suggest for the patient a reliance upon that prophylaxis with which it is the ideal of medical science to displace medication. Rest in the treatment of acute cardiac inflammations is everywhere acknowledged to be the essential means for the prevention of permanent organic

disorder of the heart. So, likewise, whenever dyscrasia of the heart tissue is recognized, a system of cardiac hygiene looking towards the improvement of cardiac nutrition should be instituted.

The irregularities of the heartbeat thus far considered have been due to abnormalities in the automatic mechanism, which, according to the trend of modern research, represents the residue of the embryonic contractile blood tube. Nothing has been said about the fully differentiated muscular tissue on whose integrity the accomplishment of the circulation directly depends.

A consideration of the conditions leading to heart failure would take us too far afield. Suffice it to say, that the nutritive well-being of the muscle fibers of the heart determines, in the end, the mechanical efficiency of the organ, the imminence of its sudden failure, and its capacity for restoration after disease. When the heart contracts it uses up more or less of its available store of potential energy, which, under normal conditions, is restored during the succeeding diastole. When, however, the nutritive supply is deficient or the fibers of the heart are degenerated, the contractile energy of the muscle is not adequately restored after a full systole, so that the next succeeding sinus impulse finds the muscle weakened and unable to accomplish a strong contraction. Accordingly in such a case we may find the heart beating regularly, it is true, but with every second beat more or less reduced in strength. This gives rise to the so-called *pulsus alternans*, which is a striking evidence of contractile insufficiency and always of grave prognostic significance. The rhythm of such a heartbeat is often rendered extremely irregular by the interpolation of extra-systoles. Strange to say, the condition chiefly occurs in cases having high arterial blood-pressure. These are usually subjects of cardiosclerosis and often present the symptoms of heart pang. In the treatment of the condition rest, and above all, sleep, are the important indications; drugs of the digitalis type are not to be employed.

Let us, in conclusion, link together some of the principal points in our knowledge. Automatism, or the spontaneous discharge of energy, is one of the fundamental properties of protoplasm,—a function which in the physiological division of labor accompanying development has been chiefly relegated to the cells of the central nervous system. In speculating as to the cause of the spontaneous discharge of energy we may imagine that in the normal chemical disintegration of the irritable molecule waste-products of a stimulating nature are heaped up, and that when they have accumulated to a sufficient amount they excite the molecule to a physiological explosion. The result of this explosion is to neutralize in some way the irritating properties of the waste-products, and the irritable molecule comes to rest until sufficient waste has again been accumulated to excite another discharge.

According to the view that has been here entertained,—a view which, however much may be said for it, has not been fully proved,—the automatic function of the mammalian heart resides neither in the cardiac ganglia nor in the fully differentiated muscle, but in a somewhat muscle-like tissue which is assumed to represent more nearly the characters of the tissue of the embryonic heart tube. Physiological and anatomical observations indicate that this irri-

table tissue is widely distributed like a network of wires throughout the substance of the heart, being collected here and there in plexuses which possibly may be looked on as automatic substations. Of all this protoplasmic network the most irritable portion is that retained in the remains of the *sinus venosus* at the root of the superior cava and its extensions in the great veins. A functional discharge is most readily excited at this point, therefore, and the stimulus thence conducted normally sets the pace for the whole heart. Through the regulator nerve of the heart, the vagus, the rate of discharge from the sinus node may be extensively modified even to complete inhibition. How this was brought about was merely a subject of speculation until Howell¹³ recently showed that vagal stimulation sets free potash ions in the heart. It is tempting to assume that the vagus produces its effects through the inhibitory action which all physiologists agree the potash ions exercise over contractile functions. The augmentator and accelerator nerves which reach the heart through the sympathetic system are, in a manner, physiological antagonists to the vagus. As has been pointed out, the rate of discharge from the sinus node, and therefore the pulse-rate, may be extensively modified through reflex causes and probably through variations of intracardiac blood-pressure, without predicated any intrinsic disease of the heart. In this case the exciting and contraction waves proceed at a normal rate throughout the heart following the lead of the automatic sinus center.

Perhaps the first indication of an essentially pathological state in the heart is to be found in a lowering of the rate and intensity of the contractile impulse. We may venture to believe that this morbid effect may involve separately any district of the cardiac substance, but clinically we are only able to recognize delay or weakness in the impulse in its transmission from auricle to ventricle, where it crosses the narrow auriculoventricular bridge known as His's bundle. Exact demonstration of these facts requires a graphic comparison of the venous and arterial pulses.

Granting the well-supported thesis that pathological conditions may increase the irritability of automatic tissue, it is easy to conceive that as a result of disease and its effects, now one and now another part of the automatic mechanism of the heart might have its threshold of irritability so lowered below that of the sinus that heartbeats, i.e., extra-systoles, should arise from these new centers and disturb the normal sinus rhythm. The law of physiological fatigue also makes it clear why such an extra beat is liable to be followed by an abnormally long pulse intermission: It is because the next normal sinus discharge enters a heart substance too exhausted to respond to the stimulation.

None of these disorders are necessarily of serious significance but they undoubtedly denote a limitation of what Mackenzie calls the "field of physiological response." It has been demonstrated that the human heart taken from the dead body and kept for hours on ice may be made to beat again by supplying the coronary vessels with an appropriate salt solution. Thus, at death the heart usually still retains considerable contractile power. It is our business as clinicians to look after the functional operations whose disorder may throw out of gear an anatomically perfect mechanism. A heart, like an automobile,

possibly stops usually by reason of a slight functional hitch which a little care may remedy or foresight prevent.

Finally, our study has dwelt upon that essential contractile weakness of the heart, as exhibited in the *pulsus alternans*, which predicates an intrinsic weakness foretelling inevitable disaster, while most other forms of heart failure, unfortunately, spring from ambush, as it were, upon a presumptively efficient organ.

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SOME GENERAL CONSIDERATIONS REGARDING THE MORE COMMON OPERATIONS ON THE NOSE AND THROAT.*

By B. FRANK WALTERS, JR., M.D.,

Otologist, Rhinologist and Laryngologist to the Frankford Hospital, Assistant Laryngologist to the Medico-Chirurgical Hospital, and Instructor in Laryngology in the Medico-Chirurgical College; Member Ophthalmological Clinic, Methodist Episcopal Hospital.

PHILADELPHIA.

THE object of this paper is to present some methods of procedure in dealing with those diseased conditions of the nose and throat with which the general practitioner comes most frequently into contact; not that he will always be able to carry out these procedures himself, but rather that he may be informed of the advisable course to be pursued. As a rule, the family

* Read before the North East Branch of the Philadelphia County Medical Society.

physician has neither the time nor the facilities for doing septum operations, turbinate work or tonsil operations as they are done nowadays; and once he has made up his mind in a particular case that the customary local treatment is insufficient, he usually refers it to a specialist, who can command the proper hospital facilities and assistants.

In tonsil work, a hospital is especially necessary. The trend of the times and the experience of nose and throat men is toward a more complete operation than in the past, which is not to be approached without due regard to technique and precautions against disaster. Considering the dangers involved and the technique to be observed, a complete tonsillectomy must be considered a major and not a minor operation.

Tonsils are removed for two reasons. First,—because they are hypertrophied and encroach upon the lumen of the oropharynx, interfering with respiration and the proper quality of the voice. Such tonsils may or may not be actively diseased. Enlarged tonsils are frequently seen which apparently have never given any trouble from inflammation, no history of sore throat being elicited. In these cases, however, the probabilities are that they *will* be the seat of an inflammatory process sooner or later; and when such tonsils are seen in children by the family physician or the school doctor, he is wise in advising their removal.

The second reason for removing tonsils,—whether large or small,—is because of an evidently diseased condition. Cheesy plugs of degenerated epithelium, inspissated secretion and bacteria may be seen in the tonsillar crypts or expressed from them, and the breath is foul from their decomposition. The tonsils are subject to recurring attacks of acute inflammation, each attack predisposing to another. Such tonsils have lost their usefulness and, aside from the discomfort of each acute attack, there is positive danger from the toxæmia and susceptibility to other diseases through the lowering of vitality, not to dwell upon that severest form of tonsillar inflammation—peritonsillar abscess or quinsy. Then, again, the lymphatics of the neck are frequently involved.

The writer removed an embedded tonsil from a four-year-old child recently in the Frankford Hospital, referred from the Surgical Department, where it had been taken for a swelling in the neck. This illustrates the advisability of examining the tonsils in all cases of cervical adenitis. The swelling was just posterior to the angle of the jaw. The tonsil of the same side was the larger of the two, and was bound down by a reflection of the mucous membrane from the pillars, very little of the tonsillar tissue protruding from between them: the typical embedded tonsil. The opposite tonsil was also enlarged and the child had adenoids. The operation was performed under complete ether anæsthesia.

It is the experience of nose and throat men nowadays, where ether is used, that better results are secured in tonsil operations and no greater risks incurred by a total abolishment of the reflexes. If a proper posture of the patient and arrangement of the operating table are observed, no blood or tissue can get

into the larynx. Operators favor one position or another as preference or experience dictates. That which has most appealed to the writer is as follows: The patient is placed on the left side with legs flexed and knees drawn up. A small sand pillow is placed under the head. The top of the operating table is tilted two or three inches out of the horizontal, putting the whole body on a slant, raising the feet and depressing the head. A nurse steadies the body from the back, and an assistant stands with the surgeon in front to attend to the mouth-gag and tongue depressor and aid in sponging. An electric headlight is always used.

In the case referred to, the smaller and more accessible tonsil on the left was first punched out with tonsil-punch forceps and the slight hæmorrhage controlled by pressure with gauze sponges. The adenoids were next removed by two or three sweeps of a Beckmann curette.

In this procedure the adenoid mass is brought down and out by the instrument and falls either into the cheek or may lie upon the left side of the pharynx or upon the pillars till dragged out by the finger. There is no danger of this tissue being inspired into the larynx, owing to the depressed position of the head; but for those who prefer it a curette is made which retains the tissue until it is carried completely from the mouth. Digital exploration of the nasopharynx is then made to remove any shreds that may be retained there and to determine the completeness of the operation, and if necessary the curette is again used until all is clear. A somewhat sharp hæmorrhage usually follows an adenectomy, but as a rule it ceases without pressure,—though there is no difficulty in carrying a gauze sponge up behind the soft palate and making pressure there until the hæmorrhage has ceased.

In the case under discussion, after finding all clear, the remaining tonsil was removed as follows: It was grasped with a pair of hooked tonsil-holding forceps, taking deep hold, and the mass pulled out into the throat. An instrument consisting of the hook of an Allis dissector, combined with a shallow, dull, non-pointed spoon on the other end, was then used to dissect around the tonsil and, aided by the finger, to detach the upper part from the tonsillar fossa. The final detachment was made by slipping a wire snare over the holding forceps, carrying it well down under the tail and over the outstanding upper lobe, and by gradual tightening severing the remaining strands of tissue, the tonsil being removed in the forceps.

Where the mucous membrane binding down the tonsil does not part readily by the use of the dissector, this instrument must be supplemented with a knife of some kind until the upper part or velar lobe, sometimes called the "shoulder" of the tonsil, is delivered from beneath the junction of the pillars. The Kyle angular tonsil knife is preferred by the writer for this purpose. The operation may be completed with the knife instead of with the snare. The advantage of blunt dissection and the snare is the lessened liability to hæmorrhage, either primary or secondary. Further, the tonsil is lifted out of its bed along the

natural line of cleavage, thus lessening the danger of injury to the muscular tissue surrounding it. It is not denied that this tissue may be torn by too forcible manipulation, and this must, of course, be guarded against by the use of the knife when unusual resistance warrants it.

The considerations impelling the removal *en masse* of the right tonsil in the case under discussion, as against punching out the major portion of it as with the left were, in the first place, its inaccessibility to the bite of the punch forceps. Some dissection was necessary before the cut could be made, and if commenced, it was as well to carry it to its logical conclusion. But beyond this, the tonsil had enlarged, deeply between the pillars,—being unable to extend out into the throat,—and the contents of the crypts could not find an adequate outlet. The irritated and diseased mass was therefore delivering its toxins into the lymph channels of the vicinity and the indications were for a complete removal, leaving no diseased tissue behind.

The writer maintains that a complete tonsillectomy is by no means always necessary or desirable. If the tonsils serve any useful purpose there can be no harm in permitting a portion to remain, where the tissue is merely hypertrophied and not actually diseased. This is especially true of children in whom lymphoid tissue probably plays some rôle in circulatory and nutritive processes. As such tissue usually decreases in size in later life it may probably be removed in its entirety in the case of adults with less liability of loss to the bodily economy; and where it is the seat of repeated acute inflammations this should be done. It is not to be forgotten, however, that the liability to hæmorrhage increases with age and that reports indicate that the more complete the operation, the greater the hæmorrhage.

In adults a local anæsthetic generally suffices. In the writer's practice this is secured by injecting an adrenalin and cocaine solution with straight and curved needles deeply through the pillars and into the tonsil at four or five points of puncture.

Nervous, delicate children require a general anæsthetic; but with robust children where the tonsils stand out freely in the throat, and no dissection is necessary, anæsthesia is frequently dispensed with. In these cases the tonsillotome is used with much satisfaction, both tonsils and the adenoid being rapidly removed while the patient is firmly held on the lap of the assistant. There is practically no shock and the child is saved a day's illness in bed. The delay and pain incident to the use of the local anæsthetic would annoy the child as much as the operation, and many children assure us that "it didn't hurt."

A tonsil operation, of whatever magnitude, is properly a hospital operation. However simple it may appear, the contingencies that may arise are of such gravity that to be caught without all facilities for controlling hæmorrhage and dealing with shock may mean disaster. Adults should remain in the hospital from twelve to twenty-four hours, or until all probability of secondary hæmorrhage has passed. We frequently permit children to go home in an hour, except where the general anæsthetic is used, when a day in bed is necessary.

Any interference with nasal respiration carries with it as annoying a train of symptoms as may be imagined. We all know what discomfort accompanies

the stuffed-up condition of the nose in an acute rhinitis or "cold in the head." Now make this permanent, and we realize the distress of those suffering from a paresis of the vessel walls of the turbinate bodies, a pathological condition known as Intumescent or Chronic Catarrhal Rhinitis.

The function of the turbinate bodies is to warm and moisten the inspired air, and to increase or decrease in size as atmospheric and thermic conditions vary. In these cases of intumescent rhinitis, repeated attacks of coryza have interfered with normal contractility to such an extent that both nasal chambers are seldom or never free at the same time, and this is the history the patient gives when applying for relief.

Now much can be done to restore tone to the weakened blood-vessels by the family physician through local treatment at the office, attention to nutrition and elimination, and the prescribing of sprays to be used at home by the patient. There is a percentage of cases, however, which requires operative interference. This the family physician may undertake if he has the apparatus and time.

Bearing in mind the rôle played by the secreting epithelial surface of the turbinates, the object is to reduce the encroachment upon the normal lumen of the nasal chambers without destroying the mucous glands. This can be most satisfactorily accomplished by submucous puncture and cauterization.

The surface to be treated is first cleansed with an alkaline spray and then anæsthetized with cocaine. The method invariably followed by the writer in all intranasal operations and which insures complete anæsthesia is as follows: Ordinary powdered cocaine is flattened with the finger into a thin layer in a watch crystal and thin pledgets of cotton, moistened (not dripping) with a one to one thousand solution of adrenalin chloride, are pressed upon the cocaine, taking it up and making a strong solution. All excess of fluid is pinched out and the pledgets carried into the nasal chamber and coapted with nicety to the surface to be treated. In ten or fifteen minutes the pledgets are removed, and a cotton-tipped probe, moistened in adrenalin and dipped into the powdered cocaine, is then worked over the surface, seeking out unanæsthetized areas. In addition to the anæsthesia there is of course the combined ischæmic effect of the cocaine and adrenalin, securing a bloodless field and shrinking the turbinates.

A special serrated knife is carried into the turbinate body close to and parallel with the bone to the depth of three-quarters of an inch or more. Very little blood follows its withdrawal. An electrocautery point heated to a cherry red is then plunged into the cut just made, and withdrawn, thus searing the bleeding surface, preventing secondary hæmorrhage and insuring the production of a good scar tissue to bind down to the bone the intumescent mass. By preceding the cautery with the knife a greater depth of penetration is secured than if the cautery were carried in alone. None of the secreting surface of the turbinate is destroyed except that just at the line of puncture. The nose is packed lightly with gauze moistened with 3 per cent. camphor-menthol in alcohol, and the patient told to report in a day or two for its removal.

Generally there is little reaction or bleeding, though the precaution is taken not to treat both sides of the nose at the same time. The turbinates, thus treated, permanently shrink, and the patient is relieved.

The consideration involved in such treatment of offending turbinates as against their removal in whole or part is the conservation of their physiologic function. The turbinates should never be removed if sufficient space for breathing or drainage can be secured by shrinking them. There are some narrow, undeveloped noses, however, wherein such treatment is not sufficient, and many cases of sinus involvement where the middle turbinate must be sacrificed in whole or part in order to secure drainage.

Except with a few nervous individuals demanding a general anæsthetic, cocaine anæsthesia as described is entirely adequate in all such cases, as well as in septum operations. The writer has operated for an hour and a half, taking out the cartilaginous and a large portion of the bony septum by the submucous route without the patient's complaining in the least of pain, no additional cocaine being applied after the first cut was made. The toxicity of the cocaine seems to be entirely nullified by the contractile effect of the adrenalin in preventing absorption, though from five to eight grains are used in every septum operation, where the surface to be covered is, of course, extensive. The same can not be said for any of the usual strength solutions as to toxic symptoms, and certainly not as to persistence of the anæsthesia. Before adopting this plan patients had frequently to be treated for cocaine poisoning, while the operation was delayed or abandoned altogether; and in those cases where it was hurriedly completed, the surgeon's ears were assailed with complaints of pain as unanæsthetized areas were opened up.

Where the operation is to be done under general anæsthesia, the nose is prepared with the cocaine and adrenalin in much the same way in order to insure a bloodless field. A little less cocaine is used, and the patient sent to the table with pledgets of cotton in the nose wet with adrenalin, which are removed just before etherization.

The submucous operation is of great value and utility in a certain class of septum deformities, as for instance a dislocated triangular cartilage standing out into one of the nostrils, or a rounded deflection of not too great convexity in a narrow nostril, or an S-shaped deflection. Here the fracturing and setting over of the septum is not always successful in relieving the obstruction; but in many other forms of septum deformity the Gleason U-flap operation gives perfect results, is much easier on patient and operator, and can be completed in five to ten minutes after anæsthesia is secured. That the submucous operation is feasible in such cases is not a sufficient reason for performing it exclusively, as is the custom in certain clinics. The simpler operation answers perfectly, and certainly causes less trauma and shock.

CAN WE ESTIMATE THE DISABILITY OF THE DEAF?*

By B. ALEXANDER RANDALL, M.D.,

Clinical Professor of Diseases of the Ear in the University of Pennsylvania.

PHILADELPHIA.

IMPAIRMENT of the hearing is so common a condition that familiarity has robbed it of much of its due weight, and it is only when it occurs suddenly or markedly that full attention is accorded it. We learned fifty years ago from v. Troeltsch that of adults one in three is deaf in one or both ears; and this apparently incredible proportion is corroborated by later students. Among children, the active causes have not yet brought their results to notice, and investigations have shown defect in as few as 5 to 10 per cent. of the youngest, though 10 to 15 per cent. are affected before the school-years are passed. This shows the reality of frequent deafness, but may only tend to belittle its importance when so far less a number seem to feel disability from it. The occurrence has been gradual and insidious in many cases, the deafness being noted by the speaker who fails to make himself understood rather than by the listener; or it has dated from so early in life as to have afforded no standard of better hearing by which to appreciate the defect, especially if it is unilateral. Yet the disability is a question of degree rather than of fact, as witness the kind invitation I have received to discuss this matter before you; and the German Imperial law of 1884 as to Industrial Pensions gives the matter needed consideration.

Confessedly the subject has much inherent difficulty. The defect is largely a negative and subjective matter; and the personal equation, so generally large, may become hysterically or fraudulently deceptive. We must assume a critical if not a sceptical attitude towards most of the claims presented by interested parties. But a little tact can solve many a difficulty, and make any malingerer bear strong witness against his own assertions. Otology has numerous strange paradoxes with which we can trip those making up their answers to cover assumed conditions. The hearing for speech is the best as well as the most practical test for real deafness. The watch is generally nearly worthless, but while we go through the form of testing with the watch our questions can be pitched in such tones and from such directions as to make them true indications of what can or cannot be heard. Few of those examined are quite ready to say that the tuning-fork is the louder in the stopped-up ear when vibrating on top of the head, even if answering in utmost sincerity; and the pretender will generally claim that stopping the ear decreases its hearing in this test. Several tuning-forks will enable us so to confuse the tests that a malingerer cannot maintain consistency, while they enable us to learn the probable seat and causation of any deafness which we find. The finger firmly inserted in the canal is never able to bar out conversational tones from an ear

* Read at the Eighth Annual Meeting of the National Association of U. S. Pension Examining Surgeons.

with a fair degree of hearing; and the binaural stethoscope, with one limb secretly plugged, makes an excellent speaking tube through which to test each ear separately.

If deafness of measurable degree is found to be present, the differential tests, with the appearance of the drumheads, throat and nose ought to enable us to decide much as to the seat and nature of the lesion and thereby as to its causation and duration. So, too, its prognosis may be made clear; for it must not be forgotten that in many cases the deafness, except under the best treatment, is apt to grow progressively worse. The limitation as to exposure to bad weather which this imposes upon many persons not yet much disabled by the defect, deserves more consideration than it is likely to receive in this connection.

With the defect of hearing there are apt to coexist subjective annoyances which may decidedly outweigh even total deafness. Vertigo is not uncommon in aural diseases of many types besides that known by Ménière's name, and nothing so impairs one's self-confidence, as well as disables him from many employments, as this liability to attacks of dizziness. So, too, the subjective "noises in the head," as tinnitus is commonly called, not only interfere greatly with the understanding of what is heard, but harass to the verge of madness or imbecility those subject to their marked occurrence. Even with slight actual defect of hearing, tinnitus may confuse all that is spoken; while the threat of impending loss which seems inseparable from this unnatural, obtrusive sound in the ears, demoralizes even the naturally cheerful. No amount of philosophy can relieve the deaf from a tendency to feel that they are purposely left out of the conversation, and that the things which are thus said so that they cannot hear them are personal criticisms. Suspicion and misanthropy are apt to be the result; and the blind are notably far more cheerful under their privation than the deaf.

In many occupations the deafness itself, as well as any accompanying vertigo, may be a source of real danger to life and limb of fellow-workmen as well as of the deaf man, since inability promptly and normally to comprehend orders may cause catastrophes. The automobile has but added to the risks of being run down which before encompassed the deaf, especially in view of their perverse tendency to walk on railroads and otherwise seem to court danger; and repeated examinations are requisite among those on railroads and other hazardous modes of employment to determine that they can safely continue in the accustomed post. If change has to be made, the troubles of the deaf at once come into striking prominence. Even in the positions which they are safely able to fill they are greatly handicapped by the defect. No one wishes to employ those with whom communication is not easy. It is often a nuisance, always a trial, for which we have scant patience; and the querulous "You must be deaf!" always imputes a serious "dumbness," too, that we are all quick to resent.

While the mere determination of deafness and its disabilities is the prime question for our present consideration, study as to the cause is essential to any proper grasp of the individual case. I have seen deafness of some seven years

duration that was due solely to a wax-plug, which a few minutes syringing perfectly relieved,—and this in a presumably intelligent clergyman, who would not have been expected to sit supinely under the infliction. Often it is the result of suppurative disease, and this must be rationally dealt with, whether active, latent or ended with cicatricial hindrances to the proper conduction of sound-waves. Not only may there be vital indications for treatment of the dangerous disease, but the hearing may be capable of huge betterment even when for many years impaired. Usually we will be wise to tell any patient with a running ear that the hearing ought to be better as well as steadier when the ear has been cured of its suppuration, but that it may be for a short time worse before it improves. The first dryness after discharge often causes a rigidity less favorable to the transmission of sound than when the parts were lubricated even with pus. This is very important to foretell, lest the patient be unduly concerned over the occurrence and accept it as a realization of the evils which many will warn him he may expect if he allows a running ear to be brought to a cure. It is a very serious matter to stop up such a discharge,—nothing but benefit is to be expected from stopping its formation. But it is poor policy to prophesy *after* the event, and it commands little of the respect or credence accorded to the knowledge that forewarns.

The inconveniences of having a blind side have passed into a proverb; but the like disability from one-sided deafness is less recognized. It is of really great importance, primarily in localizing sounds; but also in promptly determining their nature and meaning, we need the aid of both ears. The mental tax is markedly increased, since all the sounds come from one side and the irrelevant must be sorted out instead of being subconsciously side-tracked. The "fatigue of the deaf" is almost as notable in those having one perfect ear as in those who hear less and have to strain their attention to supply syllables or words unheard; and the dangers which surround them from mistakes as to the direction from which come the sounds heard may be greater than if they did not hear them at all.

Soon, if not immediately, we may look for some agreement as to the disability of the deaf, when the foregoing considerations are given more general weight. Rules will be formulated which can command wide acceptance and be fairly applicable to most cases. For the present, those of Swartz and Passow will be found useful and can be tentatively accepted.

Economic usefulness is reduced 25 per cent. by inability to hear conversational speech beyond 1 meter; 22 per cent. when between 1 and 5 meters; 11 per cent. when between 5 and 10 meters; 5 per cent. when between 10 and 20 meters. Bilateral deafness for conversational speech except close to the ear reduces it 30 to 50 per cent. Unilateral deafness reduces it for certain occupations only, and from 20 to 30 per cent. The presence and degree of accompanying vertigo and tinnitus must in each case count. Thus unilateral deafness with moderate labyrinth disturbance would disable a miner $33 \text{ per cent.} + 17 \text{ per cent.} = 50 \text{ per cent.}$; a house-painter, $0 + 33 \text{ per cent.} = 33 \text{ per cent.}$; a gardener or field laborer, only 17 per cent. The prognosis of the affection as to advance must be taken into account or hold the decision subject to later review.

Editorial

THE TEACHING OF THERAPEUTICS.

At the Conference of the Council on Medical Education of the American Medical Association, held in Chicago a few weeks ago, Dr. Arthur D. Bevan, the Chairman, emphasized by the following words the need of further improvement in our medical standards: "We have seen the woman dying of child-bed fever which might have been prevented by the intelligent aseptic conduct of her confinement. We have seen the child dead from unrecognized and untreated diphtheria, when the death might have been prevented by early laboratory or intelligent clinical diagnosis and the proper use of antitoxins. We have seen the pinched and dusky face of the man dying of peritonitis, which could have been prevented by early diagnosis and proper operative treatment.

"We who are medical men know the great difference between intelligent and ignorant, between trained and untrained medical care. But the public does not know; it does not understand. The public does not as yet realize the importance of public health measures and of measures aimed at securing properly trained medical practitioners."

The vast progress of the last two decades betokens the attitude of the profession at large in this direction; no physician worthy of the name would oppose a movement so intimately blended with our loftiest aims. Indeed, it is because of our earnest endorsement of the work of the Council that we would urge its attention to a branch of medical science which more than any other warrants the perpetuation of our profession as a useful one to mankind. We read of "two years in the *laboratories* of anatomy and physiology, pathology and pharmacology; two years in clinical work in medicine, surgery, obstetrics and the specialties; and finally at least one year of practical work as an interne in a hospital." Where is therapeutics? Has the evil influence of modern pessimism so saturated the minds of those who aim to raise our standard that the weapons through which we antagonize disease must be cast by the wayside?

The public may "not know" and may "not understand," but it is precisely because of this that we must beware of the growing tendency to create physicians who, though able to furnish a very exact diagnosis and an exquisitely accurate description of the pathology of their cases, are able only to supply very exact death certificates. After all is said and done, what the sufferer craves is relief, and protection against the fell destroyer; it is skillful *treatment*, which means to him the intelligent use of the most efficient of the innumerable palliative and curative measures which centuries of medical experience have revealed, that he craves. This is not supplied merely by laboratory pharmacology, which, though of inestimable value, but initiates the student to the threshold of therapeutics. Therapeutics, interpreted as a science, is the Toledo blade of professional knighthood; when diagnosis and pathology have revealed the vulnerable spot, it is its keen edge, guided by a sure hand, which does the

work. Our students need, by persistent, faithful effort, to be familiarized with the power of the remedial weapons we place in their hands. They must be made to understand, not only how a drug, a physical agent of any kind, influences normal tissues, but also, and above all, how it affects and modifies advantageously *morbid processes* in those tissues. The average text-book does not furnish such knowledge; it must be supplied by the teacher and inculcated into the minds of his students, engraved, so to say, upon the tablets of their memories. They must learn to *analyze* and *think*—which is much more than the great majority of text-book authors do—and acquire the habit of scrutinizing to their very depths the relations between morbid change and remedial action.

That the teaching of therapeutics on these lines—analytic therapeutics, we might term it—is practicable is now beyond question, as shown by a careful test in the Medical Department of Temple University. Here and there, and unknown to the students, the therapeutics of a given disease was treated analytically by the lecturer, the actual militant effect of each remedial agent on the morbid process *per se* being carefully brought to the fore. The final examinations showed clearly that even abstruse learning is grasped with the utmost ease when it is backed by understanding. Whenever it happened that one of the diseases taught from the standpoint of analytic therapeutics occurred among the questions, it brought out a clear, decisive and correct answer. So striking was the result that the analytic method—as far as available knowledge will permit—has been adopted as the basis of all teaching in therapeutics in the above institution—which, it must be said, exceeds all others in the country in the number of hours (572, exclusive of clinical therapeutics in the two college hospitals) devoted to this branch of medical science.

On the whole, therapeutics should not be overlooked in the development of medical education. It is the crying need of the moment if public welfare is the end in view. When precision in the use of remedies will have replaced the haphazard, dangerous empiricism of our day, the lamentable errors quoted by Dr. Bevan, and which but exemplify a multitude of others, will no longer occur. Therapeutics should be a leading branch in the curriculum of every medical school; it is the ultimate object of all our medical knowledge, the *summum bonum* of our endeavors, and, above all, our sacred bond with suffering mankind.

C. E. DE M. SAJOUS.

THE MONTHLY CYCLOPAEDIA AS THE OFFICIAL ORGAN OF THE AMERICAN THERAPEUTIC SOCIETY.

It is with much pleasure that the editors are able to announce that the MONTHLY CYCLOPÆDIA AND MEDICAL BULLETIN will begin, in the June issue, the publication of the papers of the American Therapeutic Society, the national association devoted, as its name indicates, to the branch of professional work which most directly interests the practicing physician.

Cyclopædia of Current literature

ACTINOMYCOSIS OF THE UTERINE APPENDAGES.

The gross and microscopic picture resembles that of tuberculosis in many cases. Bollinger's desideratum for the diagnosis of actinomycosis, namely, that corpora flava must be present, is untenable at the present time. Repeated bacteriological examinations, and sometimes long and tedious ones of the same specimens, must be made, to insure a correct interpretation of suspicious pathological material. Inoculation of animals with pure cultures is not attended with success. Only the injection of actinomycotic pus, or the ingestion of material upon which the actinomyces is grown, will prove successful in the production of actinomycosis in animals. Actinomycosis does not travel by the lymphatics, and probably not by the blood route. The prognosis is favorable in circumscribed cases, in which condition the uterine appendages are most likely to be found.

The treatment consists in radical extirpation and free drainage, the application of tribromphenol-bismuth, or irrigation of the fistula with copper sulphate, and the internal administration of large doses of iodide of potash, up to 75 grains a day, which exert a positive healing effect. Carl Wagner (*Surgery, Gynecology and Obstetrics*, February, 1910).

AMŒBIC DYSENTERY, TREATMENT OF.

One of the most important indications is rest, especially in the acute form of the disease, and to procure it opium may even be required. So long as scy-

balous masses are being passed, magnesium sulphate may be administered in dram doses every three hours. If the general strength be good a brief course of calomel should first be given. The use of laxatives should, however, not be long continued after the dysenteric have been converted into diarrhoeal dejecta. In cases with highly acute initial symptoms, as well as in the advanced stages of amœbic dysentery, purgatives do more harm than good. Disturbances of the circulatory and excretory organs (skin and kidneys) must be given careful consideration in the treatment.

The authors have been impressed with the therapeutic value of ipecac, especially in the earlier stages of the condition. Success with this remedy depends largely on the method and care of its administration. With capsules of animal membrane or salol-coated pills, large doses can be used without provoking nausea. Not less than 30 grains at a single dose are to be given on the first day. The amount is then reduced by 5 grains a day, so that on the sixth day only 5 grains are given; this dose, given nightly is continued for a week or ten days longer. The patient should fast for about 4 hours before taking the remedy, and remain absolutely quiet for a like period afterwards.

It is doubtful if the treatment by colonic irrigation has given better results than ipecac, though Boggs and others claim that the local method is alone effective. Most authorities believe it wise to begin the irrigations only after the acute symptoms have, in part at least, subsided. Quinine solutions are

most approved, at first in the strength of 1:5000, administered at blood temperature, then increased in a few days to 1:1000. Next in efficiency to quinine is silver nitrate. Mercuric chloride, argyrol, creosote and copper sulphate are manifestly less efficacious. Marked elevation of the hips, the insertion of a soft rectal tube 3 to 4 feet into the colon, and retention of the fluid for 15 or 20 minutes are the essential features of this method. The irrigations should be kept up until the stools fail to show amœbæ upon repeated examination.

In chronic cases which do not yield to irrigation by the rectum, whether on account of the peculiar distribution of the lesions (high in the bowel) or because of the advanced pathologic changes, appendicostomy has a real sphere of usefulness. The authors report two previously rebellious cases in which the operation and subsequent irrigation treatment were practised with marked success. The number of daily movements was reduced to practically normal, and both patients gained rapidly in weight. Quinine irrigations were employed in the first case, saline solution in the second. The fistula in each case was kept open for subsequent occasional irrigation by the patient himself. There was never at any time leakage from the fistula. The authors have also used appendicostomy in other chronic dysenteric and diarrhoeal conditions with very satisfactory results. They perform the operation in two stages, and advise strongly against ligation of the meso-appendix because of the danger of gangrene. It is much better to bring the base of the appendix well up against the abdominal wall, stitching the meso-appendix to the parietal peritoneum. In this way the possible occurrence of intestinal obstruction is also avoided. After

48 hours the appendix is brushed over with cocaine solution and snipped off with scissors. A No. 10 rubber catheter is at once introduced and irrigation of the bowel practised. Even in the small appendices resulting from obliterative inflammation the caliber is sufficient to admit a fairly large catheter. Judicious dilatation is not infrequently required to prevent closure. In amœbic dysentery the fistula should, as a rule, be maintained open indefinitely. Closure, when desirable, is best accomplished with the Paquelin cautery or nitric acid. The operation of cæcostomy is always more or less unsatisfactory on account of the difficulty of preventing leakage. J. M. Anders and W. L. Rodman (*Journal of the American Medical Association*, February 12, 1910).

APPENDICULAR GASTRALGIA.

Appendicular disease may give rise to symptoms which closely mimic the supposed symptoms of gastric and duodenal ulcer. The prominent symptom is epigastric pain or severe discomfort after taking food. In many cases there are sour eructations, vomiting, and even hæmatemesis and melæna. The radiation of epigastric pain to the lower abdomen is very suggestive of appendicular trouble. Gastric analysis reveals in some cases hyperchlorhydria, in others a normal amount of free HCl, in others a marked diminution or absence of free HCl. As a rule there is an increase of the volatile acids, and in some cases evidence of hypersecretion. Some cases of hypersecretion or acid dyspepsia and many cases of supposed gastric or duodenal ulcer are due to latent appendicular disease.

The evidence that the gastric symptoms are due to appendicular disease is threefold: (a) the majority of the

patients are cured by appendicectomy; (b) the influence which appendicectomy has on the gastric contents; and (c) the frequency of a previous history of gastric symptoms in those who have an attack of acute appendicitis. The symptoms are probably the result of intestinal toxæmia due to intestinal stasis. The effect on gastric secretion is, in the early stages, possibly due to pyloric spasm, but more probably to some influence of the appendix on gastric secretion. Appendicular gastralgia is apparently more common in women than in men.

The important lessons to be learned from these cases are: 1. That no operation should be performed on the stomach except when a definite organic lesion of the stomach or duodenum exists. Gastro-jejunoscopy will not cure appendicitis. 2. That in all operations for supposed gastric or duodenal ulcer, the condition of the appendix should be carefully investigated. H. J. Paterson (*Lancet*, March 12, 1910).

CARBUNCLE ON THE FACE, PASSIVE HYPERÆMIA IN.

A conservative treatment of carbuncles on the face is advocated by the author, who finds that by bringing about passive congestion the usual extensive and mutilating incisions are rendered unnecessary, the cap of the pustule alone being removed. Suction devices were abandoned in favor of a constricting band around the neck. The band is preferably made of rubber tissue 3 centimeters (somewhat over an inch) broad, and should be placed low down on the neck. Very mild constriction is sufficient, and the band should be worn 20 to 22 hours daily unless œdema be easily caused, when the time may be reduced. The first and most remarkable effect is the relief of pain. The area involved then

becomes swollen to almost twice the previous size and shows marked softening. On the second or third day of the hyperæmic treatment an abundant purulent discharge sets in. Even in the severest cases, however, suppuration ceases in a few days; the discharge becomes serous and then stops altogether. Great care should be taken not to injure the tissues, carefully avoiding squeezing out the pus. Intervention with the knife was in no case necessary. In twelve cases of carbuncle on the upper lip the congestive method gave excellent results. The constricting band may also be applied for carbuncles on the back of the neck when they are located high enough to permit. W. Keppler (*Münchener medizinische Wochenschrift*, February 15 and 22, 1910).

CHOLECYSTITIS.

Cholecystitis is a much more common and serious disease than gallstones. It is the beginning of all gallstone disease and of most of the other inflammatory processes in the upper abdominal cavity. When properly treated, it is curable either by dietetic and hygienic means or by operative measures. Cholecystostomy seems to be adequate in most cases, but cholecystectomy must be performed when the gallbladder is gangrenous, or when the duct is completely obstructed. Cholecystectomy should be performed as a secondary operation and several months after the primary cholecystostomy. Bayard Holmes (*International Journal of Surgery*, February, 1910).

COAGULATING POWER OF CERTAIN HÆMOSTATIC REMEDIES.

Unsterilized gelatin increases the coagulating properties of the blood, the clot either forming more rapidly or being rendered heavier. If gelatin be steril-

ized, however, at a temperature of 130° to 135° C., this influence is lost. Sterilized gelatin has no coagulating power, either when taken by the mouth or when used locally in 10 per cent. solution (sterilized by boiling). Calcium chloride in the usual doses is almost or quite inactive. Perchloride of iron taken by the mouth hastens coagulation, though to a less degree than gelatin administered hypodermically. Ammoniated citrate of iron is inactive. Ipecac slightly favors clotting, but this is followed by an opposite effect. An artificial gelatin made by combining gum arabic with perchloride of iron, the whole being then sterilized, is very efficient when injected hypodermically. Ciuffini (Il Policlinico, December, 1909).

DISEASES OF THE MOUTH AND SYSTEMIC DISEASES, RELATION BETWEEN.

A foul mouth is a culture medium for pathogenic bacteria and the mouth or teeth must, therefore, be inspected both in the prevention of disease and in its diagnosis and cure. The gums and teeth may be valuable indicators of serious nutritional disturbance. Even though gingivitis has been due primarily to the toxæmia of imperfect metabolism, once the inflammation has started the absorbent surfaces become avenues of secondary infection. H. B. Allyn (Pennsylvania Medical Journal, February, 1910).

DUODENAL ULCER, THE DIAGNOSIS OF, AND CAMMIDGE'S REACTION.

That some of the cases which physicians have been accustomed to diagnose as hyperchlorhydria, atonic dilatation of the stomach and nervous dyspepsia in reality owe their symptoms to an ulcer in the duodenum is now generally admitted. Any clinical sign which would absolutely show the presence of a lesion

in the duodenum must, therefore, be of great diagnostic value. The author believes that we have such a sign in Cammidge's C reaction. This reaction is generally recognized as pointing very strongly to chronic pancreatitis. But chronic pancreatitis often follows duodenal ulcer, and pancreatitis unaccompanied by jaundice is most commonly due to extension of a duodenal catarrh along the pancreatic ducts, which implies a source of irritation in the duodenum. Therefore in a case presenting the characteristic pain coming on some time after a meal, the presence of the pancreatic reaction would justify us in assuming the probable existence of a duodenal ulcer rather than of a functional hyperchlorhydria in the stomach, while in like manner the absence of the pancreatic reaction would show that there was no duodenal trouble and point to a functional condition.

Five cases are detailed which showed the pancreatic C reaction and in which the presence of duodenal ulcer was verified at operation. Twenty additional cases are cited which did not come to operation, but in which the presence of the pancreatic C reaction, taken with the characteristic symptoms, justified, in the author's belief, the diagnosis of duodenal ulcer. George Herschell (Clinical Journal, January 12, 1910).

ECLAMPSIA, PUERPERAL, TREATMENT OF.

If eclampsia is really the outcome of a toxæmia, then elimination is the logical course to favor. Any factor which materially interferes with the processes of elimination should be handled with caution. In general terms, diuretics, cathartics, and diaphoretics should be more or less employed, the kind, quantity and frequency in the administration of each

being regulated to suit individual conditions. Among the diuretic measures, subcutaneous injections of normal salt solution are not only helpful in renal congestion, but doubly indicated after hæmorrhage or venesection. We gain nothing by controlling convulsions if our patient is to die in uræmic coma. In the author's belief, the main factor which, in the past, has been conducive to high mortality in puerperal eclampsia is the tendency to rely too much upon some favored heroic measure for controlling convulsions. J. H. Hiden (*Virginia Medical Semi-Monthly*, Feb. 25, 1910).

ECLAMPSIA, RENAL DECAPSULATION IN.

After all the ordinary measures had failed to bring on diuresis in three dangerous cases of eclampsia, bilateral renal decapsulation was employed with excellent results. The incisions were made parallel with the twelfth rib. After decapsulation the fatty perirenal tissues were sutured and drainage instituted. No untoward results followed. The author is of the opinion that many cases now considered hopeless can be saved by this procedure. Lichtenstein (*Zentralblatt für Gynækologie*, No. 2, 1910).

EPILEPSY, DEATH IN.

The duration of life after the onset of the disease may be several years, but as the onset is very common in the early years of life, the net result is the premature death of epileptics as compared with normal people. The causes of death in epileptics are quite largely associated with the disease itself, and may be divided into two main groups, pulmonary conditions and conditions of purely epileptic character. Pulmonary conditions usually have at their foundation the pulmonary œdema which is so often

associated with seizures, etc., and hence are secondary to the epilepsy. Exposure while helpless or automatic after a seizure may also be responsible for lung conditions. It is possible that the frequent congestions and œdemas occurring in these lungs make the soil fertile for the tubercle bacillus.

Death is imminent at the time of seizures, unless help is at hand. The cause may be traumatic, suffocation may take place, or death may occur without any apparent cause. Epileptics dying in a seizure will usually show some, but rarely if ever all, of the signs of seizure. The anatomical findings are œdema and congestion, and often the diagnosis of seizure death has to be made largely by exclusion. It follows that the epileptic should be left by himself as little as possible. His walks should be in company or else in frequented places, and his repose should be under the watchful eye of a night nurse, or at least he should be in the same room with several other patients. J. F. Munson (*Medical Record*, January 8, 1910).

EPITHELIOMA, FORMALDEHYDE IN THE TREATMENT OF.

The authors made use of the commercial 40 per cent. solution of formaldehyde in the treatment of two cases of epithelioma of the face, with success. Absorbent cotton soaked in the solution was placed in contact with the lesions. The outgrowing masses of neoplastic tissue were rapidly destroyed and the surface of the ulcers became covered with a closely adherent pulpy layer. After two more applications this layer became separated, exposing a granulating surface, which later healed completely. The pain which follows the cauterizations can be obviated by repeated injections of a 1 per cent. solution of

novocaine. No recurrence has been noted in the ten months which have elapsed since the cases were treated. This shows that the action of the formaldehyde is not confined to the part with which it is in direct contact, but that it infiltrates the surrounding tissues. In this respect it is superior to most of the other caustic agents, especially heat and electricity. The formaldehyde treatment is adapted to cases in which the lesion is not larger than a fifty-cent piece, in the absence of secondary lymphatic involvement, and where the patient refuses operation. Hallopeau and Fumouze (*Bulletin de l'Académie de médecine*, February 22, 1910).

GASTRO-ENTERIC TOXÆMIAS OF BOTTLE-FED INFANTS, PROPHYLAXIS AND TREATMENT OF.

Prophylaxis.—Certified milk, notwithstanding its disadvantages of cost, production of constipation, and somewhat inferior nutritive qualities, is the means of saving the lives of many infants. But it cannot compare with reasonably clean milk fresh from the cow as a food for infants at any season of the year. The author has yet to see a case of infection from the use of such milk. When neither milk fresh from the cow nor certified milk can be procured, the ordinary milk used should be pasteurized in hot weather, the mother being instructed how to do this. Next to clean milk in importance in the prophylaxis is fresh air. Mothers should be taught the value of keeping the baby out-of-doors night and day during the hot months. Heat is another factor in the production of gastro-enteric disease, a temperature range of from 74° to 90° F. being especially dangerous. The author found that most of the cases of infection resulted from the 10 P. M. feeding, due probably

to two factors—the milk is older at this time and the nursery excessively hot. To put a baby to bed in a room at 81° F. invites an attack of indigestion from heat depression. If the child is placed, instead, out-of-doors at night on a properly screened porch, with the temperature at 71° F., and gradually dropping, the factor of heat is eliminated. Over-feeding is best avoided by giving the baby an abundance of fresh boiled water to drink. The destruction of flies is important, and good screens should be provided. Light clothing and frequent cool bathing are essential.

Treatment.—1. The withholding of all food for at least three days is imperative; after that time barley water may be given. 2. The child should rest in bed out-of-doors, and not be allowed to creep or sit up. 3. The toxins should be eliminated by stomach washing, colonic irrigation and catharsis. The physician is usually called in early, and no procedure is so valuable as stomach washing, using boiled water at 100° to 110° F., to which a little lime water may be added. Two drams of castor oil should be given through the tube before its withdrawal, and a thorough colonic irrigation then given. After the stomach is settled, cooled boiled water may be given freely by the mouth. This is all that is required in most cases. In cases seen later, stomach washing is not indicated unless there be gastric irritability, but colonic irrigation should be done every four hours on the first day of treatment and subsequently twice daily. This should be followed by nutritive enemata at four-hour intervals. If the rectum protrudes and becomes irritable, the application of a 5 per cent. ointment of cocain will be efficacious. It is well to be cautious in the administration of cathartics.

4. To control temperature and restlessness, a tub bath is the best measure; the child may be placed in the tub from ten to twenty minutes. An ice cap to the head is useful. 5. Bismuth subnitrate may be given to allay the inflammation, from 1 to 2 drams daily being administered to a child one year old. Salol, 1 or 2 grains every three hours, is of some benefit as an intestinal antiseptic. Opium is indicated if there is much pain and continued frequent stools; it is also useful in convalescence when feeding is followed by bowel movement. Where there is prostration, brandy should be added to the boiled water taken by the infant to allay thirst— $\frac{1}{2}$ ounce in 24 hours. During convalescence tonics such as iron and arsenic are indicated, and removal to the country or seashore is desirable in cases prone to relapse. J. A. Hulse (*Journal of the American Medical Association*, April 2, 1910).

GLYCOSURIA IN ELDERLY PERSONS, MANAGEMENT OF.

The glycosuria of elderly life is due, in many instances at least, to excessive carbohydrate feeding. It begins with loss or decrease in the capability of assimilating a few special carbohydrates,—those which have been used in greatest excess. In this country the carbohydrates most abused are cane sugar and wheat starch, and these are the ones for which the power of assimilation is most frequently lost. There is a specificity in the metabolism of carbohydrates as there is in that of proteins. The early glycosuric of this class is often easily able to care for other carbohydrate foods. Being ignorant of the defect in taking care of sugar and wheat starch, he continues consuming these substances.

The presence of a small amount (0.5 to 2 per cent.) of sugar in the urine should not be regarded as a matter of trivial importance. When sugar accumulates in the blood sufficiently for it to appear in the urine, it has become a poison, which, unless some intercurrent disease does the work, will kill sooner or later.

The harmful carbohydrates should be eliminated from the diet. The first thing to do is to ascertain which foods of this class the individual can still assimilate. For this purpose the author cuts off all carbohydrates for a week, and if this is followed by complete disappearance of sugar, tries oatmeal. At first the latter is taken with water, which may be seasoned with saccharine or with butter, and later it is tried with rich cream. Whether the oatmeal is borne or not, potatoes, peas, beans, etc., are then tried one by one. Frequent examination of the urine is necessary, and if the patient be an intelligent man, the author permits him to do this in part, often having him test every micturition for several successive days. Many of these "mild" glycosurics can assimilate most starchy foods except sugar and wheat starch. When the special carbohydrates that cannot be properly metabolized are withdrawn for a while, the capability of disposing of them normally is often regained.

In many persons the power of assimilating carbohydrates is largely determined by the time of day when the food is taken. Glycosurics who cannot metabolize carbohydrates taken for breakfast may dispose of one hundred grams of bread taken at six o'clock dinner. Why this is true it is hard to say, unless it be due to the more hurried way in which many foods and medicines pass through the body when taken in the morning.

An important point is the value of the open air treatment of this form of glycosuria. Most authorities on diabetes state in a general way that life in the open air is beneficial, but this has not been sufficiently emphasized. Porch sleeping is quite as beneficial to the glycosuric as to the tuberculous. Victor C. Vaughan (New York Medical Journal, February 26, 1910).

HYPERTHYROIDISM IN THE ADOLESCENT.

The author describes a condition of thyroid hyperæmia which he has been observing for several years past. It arises at puberty, and all cases seen were in girls. The usual history is that the patient has grown rapidly, has been busy at school, has been observed to be nervous, and then the discovery has been made that the collar is unduly tight. On examination, the thyroid gland is found to be symmetrically enlarged, occasionally the right lobe slightly in excess; it is firm but yielding; no bruit is felt or heard. There is usually a moderate simple anæmia. There may or may not be tachycardia. The patient is markedly nervous; there may be a slight tremor. In two cases there seemed to be a tendency to exophthalmos and the entire clinical picture was that of mild exophthalmic goiter, yet recovery was prompt, there was no return of the disease and the resemblance to Parry's disease was in the end only a simulation. This transient hyperthyroidism represents, according to the author, the over-response of the thyroid to the special altered internal secretions manifest at puberty.

The treatment is largely a matter of hygiene. A rest from school activities, life in the open air, nourishing food, a change in the drinking water and an

avoidance of nervous excitement are the prominent features. The anæmia should be corrected and nerve sedatives administered as required. Small doses of arsenic exert a retarding influence on the over-active gland. The condition should disappear in a few weeks or months. In some cases the subsidence of the disease appears to be spontaneous. F. B. Cross (Long Island Medical Journal, April, 1910).

IRON, THERAPEUTIC USES OF.

The hæmoglobin-regenerating action of iron is best availed of by giving insoluble preparations, inasmuch as the researches of Dumont have served to indicate that iron is absorbed by phagocytes, and those of Fleig, that insoluble iron provokes this process of phagocytosis more actively than the soluble preparations. A second effect of the administration of iron is to stimulate oxidation. Iron also directly excites the glands of the stomach, and has a distinct antiseptic action in the intestinal tract. Hence preparations of iron should not be given in cases of hyperchlorhydria, but rather in cases of chloroanæmia associated with intestinal fermentation. Iron is comparatively useless in parasitic anæmias, in leukæmias, and in anæmias of renal origin, in which often there is present only a kind of relative anæmia due to retention of water in the tissues and blood. Its use may be dangerous in anæmias associated with gastric symptoms, in which an examination of the stools for occult blood to exclude the presence of ulceration should always be made before prescribing it, and in anæmias of tuberculous origin, in which it may activate the morbid process by increasing oxidation. Certain cases of chlorosis in association with tuberculosis are benefited, but in the

average case of pulmonary tuberculosis it only serves to aggravate the condition.

In order to obtain its full beneficial action, iron, when administered, should be continued for from six weeks to two months. In anæmia due to auto-intoxication from the gastro-intestinal tract, with the passage of hæmolytic substances into the blood, as occurs frequently in chlorosis, the return of the gastric functions to normal should be favored by proper dietetic measures and regular bowel movements secured by means of laxatives, before the use of iron is begun. The following pill may then be prescribed: Subcarbonate of iron, 0.10 gram ($1\frac{1}{2}$ grains); powdered aloes, 0.02 gram ($\frac{1}{3}$ grain); extract of rhubarb, 0.05 gram ($\frac{3}{4}$ grain); two pills before meals. In anæmia due to lead, iron is useful in association with the iodides. The protiodide of iron is valuable in this condition. In anæmia following acute infections such as acute articular rheumatism, pneumonia, and septic states, the physician prescribing iron should be on the watch for signs of tuberculosis. In malarial anæmia, Jaccoud recommends the use of the tartrate of iron and potassium in combination with extract of cinchona in large doses. Post-hæmorrhagic anæmias should not always be treated with iron, since the administration of this drug may provoke hæmoptysis or hæmatemesis. It may be given, however, after hæmorrhage resulting from trauma, when the flow of blood has been checked, and in cases of metrorrhagia due itself to changes in the blood. Excessive menstrual discharge in young girls may frequently be arrested by the following: Subcarbonate of iron, 0.10 gram ($1\frac{1}{2}$ grains); ergot (Bonjean), 0.05 gram ($\frac{3}{4}$ grain); quinine hydrobromide, 0.01 gram ($\frac{1}{6}$ grain); extract of belladonna, 0.005 gram ($\frac{1}{12}$ grain);

two pills before meals. In anæmias of the pernicious type, the use of arsenic and bone-marrow is indicated. The pseudoleukæmic anæmias occurring in children are probably often due to syphilis and should receive appropriate treatment. If this prove not to be the case, the diet should be corrected, and iron prescribed, either as the protoxalate, in the dose of 0.05 to 0.10 gram ($\frac{3}{4}$ to $1\frac{1}{2}$ grains) daily, or as the cacodylate (0.05 gram). In cases where the digestive tract was in poor condition, the administration of these salts by subcutaneous injection gave good results. H. Huchard and C. Fiessinger (*Revue de thérapeutique*, March 15, 1910).

MENINGITIS, DECOMPRESSION IN THE TREATMENT OF.

The author contends that lumbar puncture has been undeservedly neglected as a therapeutic agent, which, if employed properly, would save many lives and relieve much unnecessary suffering. The most prominent features of meningitis—headache, vomiting, and stasis papillæ—are evidences of increased intracranial pressure, whatever morbid lesions be their cause, and the relief of this excessive pressure becomes the prime indication for immediate lumbar puncture. The mechanical effects outweigh the toxic lesions, the damage from the former soon becoming irreparable, while the toxic lesions sooner or later disappear, often completely. Energetic prophylactic decompression by lumbar puncture would reduce to a minimum such disastrous results as optic neuritis, deafness, oculomotor disturbances, and some psychopathies. Such decompression is feasible in the vast majority of cases, as the aqueduct of Sylvius is seldom totally occluded. The earliest possible recognition of the pressure symptoms is of

course necessary; repeated total and differential leukocyte counts furnish valuable information for this purpose.

In support of the view that uncomplicated meningitis, even tuberculous, is curable by timely relief from the excessive intracranial pressure, the author reports four cases, three of them from his personal practice. The first was one of serous meningitis and was cured by lumbar puncture, no other therapeutic measures being employed; 62 c.cm. of clear fluid escaped under marked pressure, and improvement began immediately after. In the second case the meningitis was probably of influenzal nature, with marked leukocytosis and polynucleosis, pneumonia of the right upper lobe, and double otitis media. Improvement occurred after lumbar puncture, progressing to complete recovery. In the third case, also probably influenzal, recovery after decompression was very rapid. The last was a case of tuberculous meningitis, with fluid rich in lymphocytes, and strongly positive Pirquet reaction. Two lumbar punctures were practised at an interval of about two weeks. Recovery followed, and is to be attributed to decompression, since no other therapeutic measure was employed. J. F. Hultgen (*American Journal of the Medical Sciences*, March, 1910).

PANCREATIC ABSCESS AND MALIGNANT ENDOCARDITIS.

A man 22 years of age was suddenly seized with severe abdominal pain in the region immediately above the umbilicus. With it were associated vomiting, rapid pulse and peritonitic facies. Tympany was absent. Marked icterus later appeared, the temperature rose, and death occurred on the third day of the disease. At the autopsy three small abscesses in

the head of the pancreas were discovered, and a number of enlarged lymphatic glands were found to be causing pressure on the bile-duct. The peritoneum, stomach and intestinal tract were normal, but the liver was in a state of marked degeneration. The mitral valve showed recent ulceration. Such a clinical picture has been recorded in cases where lesions involving the whole pancreas have existed. But in the present case, in view of the small size of the abscesses and the marked acuteness of the symptoms, the authors believe that the manifestations must have been due, at least in part, to compression of the solar plexus by the enlarged lymph-nodes. The icterus, which was also due to pressure exerted by these nodes, is an exceptional occurrence in the fulminating type of cases. Emboli composed of staphylococci were found distributed in every organ. The ulcerative endocarditis was probably the starting-point, from which the secondary pancreatic abscesses and terminal emboli resulted, but had remained latent until the pancreatic and lymphatic involvements had given rise to acute symptoms. Hepatic degeneration was undoubtedly a prominent factor in the patient's death. Josué and Velter (*Société Médicale des Hôpitaux; Bulletin médical*, January 26, 1910).

PELLAGRA, HÆMATOLOGY OF.

There seems to be present in pellagrins a fairly constant secondary anæmia, usually not of a severe type, with corresponding qualitative changes in the red blood cells. Leukocytosis, which is rarely seen, is probably not a phenomenon of uncomplicated pellagra. The results obtained by various workers on differential leukocyte counts are very discordant, and conclusions should be drawn therefrom with much hesitation.

Nothing resembling a protozoan parasite has been reported as observed in the blood of pellagrins. The author has found the blood of pellagrins in South Carolina uniformly sterile in cultural work, and not infective for ordinary laboratory animals. He was unable to isolate Tizzoni's micro-organism. C. H. Lavinder (Virginia Medical Semi-Monthly, January 21, 1910).

PREMATURE DETACHMENT OF THE NORMALLY SITUATED PLACENTA.

Rupture of the membranes and leaving delivery to nature are only justifiable when the uterus is contracting vigorously and the os is fully dilated. Rupture of the membranes and rapid delivery should not be done until the uterus is contracting rhythmically, the patient has rallied, and the os has undergone some degree of dilatation. The tampon and binder should be used when there are no contractions of the uterus, no dilatation, and where the patient is in a collapsed state, and its use continued until such time as the patient and uterus have recovered. An external hæmorrhage is converted into a concealed hæmorrhage by the use of the tampon. If the uterine walls are incapable directly or indirectly of withstanding a pressure within them equal to the maternal blood-pressure, and should they be distended as the result of increased intra-uterine pressure, the tampon and binder will, if properly applied, render them capable of holding the pressure of the blood and so control the hæmorrhage. M. T. Goldstine (Surgery, Gynecology and Obstetrics, February, 1910).

PUERPERAL INFECTION, LOCAL TREATMENT OF RECENT.

Recent puerperal endometritis is seen, according to the author, in three

forms: simple endometritis, ulcerative endometritis, and retention of placental or other fragments. Simple puerperal endometritis will usually terminate favorably if left to itself. In greatly prolonged cases, however, or where there is retention of secretions, intervention by drainage of the uterine cavity or curettage is justifiable. In ulcerative endometritis, the local treatment should consist of vaginal douching and sufficient drainage to insure free evacuation of secretions.

In the third group of cases, where portions of the placenta or membranes are retained, the treatment varies according to individual conditions. Thus, where there is retained material in a patient showing normal temperature, its prompt removal is indicated. The same is true of cases where serious hæmorrhage appears, even if signs of local infection be also present, since the danger from loss of blood is greater than that arising from the possibility of general septic infection due to interference. Where fever is present unaccompanied by hæmorrhage, the management of the case depends upon the temperature and the patient's general condition. If the fever be of moderate degree only and the general condition good, a delay of a few days up to a week is justified, in the hope that the uterus will empty itself by powerful contractions, which may be initiated, if necessary, by the administration of ergot. But if the onset of local infection be marked by high fever or symptoms of severe intoxication, curettage must be performed. It is well to delay intervention, however, until it is clearly shown to be necessary by the presence of virulent streptococci in the vaginal discharges. If retention of foreign material be associated with symptoms of extra-uterine infection (as

beginning peritonitis, recent exudates, thrombosis of the veins, or adnexal involvement), curettage must strictly be avoided (unless the woman's life be threatened by hæmorrhage), in the first place because the importance of the local phenomena is overshadowed by the extra-uterine condition, and secondly, because any manipulation of the uterus under such circumstances is attended with the risk of intensifying this condition. In cases where curettage is indicated, the author advises that it be done with the finger, never instrumentally. Winter (Medizinische Klinik, January 23, 1910).

SCOPOLAMINE AND MORPHINE IN SURGERY AND OBSTETRICS.

The use of scopolamine and morphine alone, unsupported by chloroform, ether, or other anæsthetic, is wholly unsuited for general anæsthesia. Their use preliminary to that of chloroform or ether has certain advantages, but it renders the problem of anæsthesia more complicated, necessitating extreme care, judgment and discretion. There are also numerous contraindications to their use. While it seems probable that scopolamine and morphine may have a sphere of usefulness in childbirth, as well as in surgery, many details of their use require to be perfected before they can become generally useful, even in institutions. Indeed, they are wholly unsuited, in the present state of our knowledge, for use in general obstetric practice. The pharmacology of scopolamine and morphine and of the interactions of the two, is of prime importance in the study of their uses. Since each substance must only be used with reference to its individual actions, at the same time bearing in mind that the action of

each may be greatly augmented or modified by the other, there is no possible excuse for the employment of ready-made mixtures (in pills or solutions) of the drugs. In obstetric practice, the danger to the child must be kept constantly in mind, even when the utmost care has been exercised in the selection of cases suitable for their use, and when small doses are ineffective in inducing the "twilight sleep," large doses should not be used. R. A. Hatcher (Journal of the American Medical Association, February 5 and 12, 1910).

WHOOPIING-COUGH, QUININE SALVE IN THE TREATMENT OF.

For the past two years the author has treated all cases of whooping-cough by applying to the nasal mucous membrane a salve containing 1 to $2\frac{1}{2}$ grams of quinine in 10 to 15 grams of lard (i.e., 30 grains to 2 drams in the ounce). A portion of salve the size of a pea was introduced into each nostril three or four times daily by means of a glass rod, and caused to pass back in the nasal cavities by lowering the child's head. In one case there was immediate benefit. In general, the symptoms were considerably improved at the end of three or four days. The frequency and severity of the paroxysms were decreased, and the characteristic whoop was soon lost, the cough becoming of the usual type. Return of the symptoms was occasionally noted, which soon yielded when treatment was resumed. The method is especially effective in very young children. General convulsions following paroxysms in children less than two years old generally cease as soon as the use of the salve is begun. L. Berliner (Münchener medizinische Wochenschrift, February 15, 1910).

Clinical Summary

Of all practical articles and abstracts that have appeared in the Monthly Cyclopædia and Medical Bulletin during the current year.

Addison's Disease. TREATMENT. Begin with 3 grains of desiccated adrenal gland three times daily after meals, and gradually increase the dose till temperature and pulse become normal; then maintain last dose. *Sajous.*

Page 75

Adrenals, Diseases of. DIAGNOSIS. Adrenal insufficiency is suggested by: 1. Circulatory disturbances (small pulse, low tension, tachycardia, chilliness, white line). 2. Digestive disturbances (anorexia, vomiting, diarrhœa or constipation). 3. Nervous disturbances due to toxic irritation of plexuses around adrenals. 4. General disturbances (anæmia, emaciation, progressive amyotrophy). Diagnosis confirmed by benefit from organotherapy. *Boinet.*

27

Anæmia. TREATMENT. Seven cases of severe anæmia greatly benefited by transfusion of only 5 cubic centimeters (75 minims) of human blood. No benefit in cases of leukæmia. Transfusion of this amount generally harmless, though blood from certain persons showed some toxicity. *Weber.*

63

Angina Pectoris. DIAGNOSIS. Presence or absence of signs of organic disease at root of aorta should be ascertained. Signs of general arterial or aortic disease coexisting with history of precordial pain warrant diagnosis. A slight harsh clicking sound accompanying or following the sound of aortic closure, suggesting to the ear a roughening of the aortic cusps, is of value in the diagnosis. *Butler.*

22

TREATMENT. Erythrol tetranitrate has a less marked but more lasting effect than nitroglycerin. Especially indicated in those patients who are awakened at night by the pains. *Huchard and Fiessinger.*

172

Ankylosis. TREATMENT. Fibrolysin used with benefit in joints ankylosed as result of rheumatic affections. Single dose used was 2.3 cubic centimeters (37 minims) subcutaneously, sometimes more; largest total amount given was 117.3 cubic centimeters (4 ounces). Untoward effects: sometimes sensation of fatigue on day of injection, and occasionally slight local inflammatory reaction, which disappeared with moist dressings. Best results where ankylosis due to extra-articular connective tissue; less improvement in presence of pus and in gonorrhœal cases. Used in conjunction with hygienic and dietetic measures, warm sulphur baths, and later active and passive movements. *Knotz.*

124

Appendicitis in Pregnancy. TREATMENT. In severe cases operate without delay. Mild

cases do not demand operation unless there are frequent attacks. When near the end of gestation or in labor, terminate pregnancy and remove appendix immediately after. *Findley.*

160

Arteriosclerosis. DIAGNOSIS. Careful ophthalmoscopic examination frequently reveals the earliest signs of arteriosclerosis. *Bruner.*

23

Arthritis Deformans. TREATMENT. Progress of disease often stopped by removal of causes of irritation, such as inflamed appendix, hæmorrhoids, etc. Where primary lesion obscure or no longer operative, best results obtained indirectly by relieving pain in affected joints. This is done by applying an absolutely rigid retention dressing, with the limb in such a position that the antagonistic muscles are in absolute equilibrium. If limbs cannot be brought into desired position without extreme pain, contractures are broken up under anæsthesia, and tendons lengthened, if necessary, by tendoplasty. Plaster-of-Paris dressing is applied, and allowed to remain until pain and irritation have subsided. A new plaster mold reinforced with basket splints and wheat gluten bandages is then substituted. *E. H. Ochsner.*

221

Ascites. TREATMENT. Autoserotherapy retards transudation into peritoneum and produces lasting polyuria. Under local anæsthesia withdraw a little fluid from peritoneal cavity with sterile hypodermic syringe, and at once reinject in subcutaneous cellular tissues. Repeat at six-day intervals, injecting progressively larger doses of ascitic fluid (3, 5, 8, and 10 cubic centimeters). Continue treatment for two months. *Audibert and Monges.*

160

Asphyxia. TREATMENT. Adrenalin, slowly administered intravenously; 10 drops of 1:1000 solution in 1 drachm of saline solution. Artificial respiration. *Sajous.*

75

Asthma. TREATMENT. To arrest paroxysms, adrenalin (5 to 10 minims of 1:1000 solution in 1 drachm of normal saline) may be slowly injected into a superficial vein or hypodermically. *Sajous.*

75

Brain Tumor. TREATMENT. A decompression operation is indicated where grave symptoms of increased intracranial pressure exist, and especially should not be delayed when papilledema (choked disc) is developing rapidly. If the symptoms do not call for immediate decompression, antisyphilitic treatment may first be tried. *Spiller.*

223

Bronchitis, Chronic. TREATMENT. 1. Potassium iodide combined with syrup of hydriodic acid; may be alternated with terpin hydrate. Creosote is also valuable; combined with whiskey and glycerin it will rarely disagree with the patient. 2. Sedatives or anodynes to be avoided. The least objectionable are bromides, henbane, or codeine. Where dyspnea or nervous irritability, Hoffmann's anodyne, with the iodide. 3. A mercurial followed by salts, once a week or oftener, reduces cough and expectoration for a time. 4. Persistent counter-irritation to the chest, using compound tincture of iodine; occasional intermissions when skin becomes tender. 5. Inhalations of a mixture of equal parts creosote, alcohol and spirit of chloroform, using perforated zinc inhaler. 6. Patient should not be housed. Change of climate where practicable; preferably to Georgia in winter, Adirondacks in summer. *B. Robinson.* Page 88

Carcinoma. TREATMENT. Quinine, stirred with water to a paste, used locally in cases of epithelioma where operation refused. Application repeated four times on alternate days. Caustic action at first exerted on ulcers, which later healed completely under simple iodoform dressing. Also useful in palliative treatment of inoperable uterine cancer. The remedy is of diagnostic value, as on ordinary erosions it does not have the destructive effect produced on cancer. *Stroné.* 94

The use of high-frequency currents found valuable in treatment of malignant growths, denuded surfaces, slowly healing wounds, and tuberculosis. On epitheliomas they exert a selective cytolytic action. Infected glands disappear, and discharge becomes odorless. Current has an analgesic effect. Time of application should never exceed 10 minutes. For internal growths current is used after operation to promote cicatrization. *Rivière.* 124

Acetone used in palliative treatment of 15 cases of inoperable uterine cancer. Hardens the tissues and stops hæmorrhage, septic absorption, and odor. After curetting under ether, solution of acetone is poured into the cavity through a conical speculum, contact with normal vaginal tissues being avoided. Hips elevated. Excess drained off through speculum and subsequently by tampon. When discharge begins again treatment is repeated without ether. Pain was not relieved but marked relief obtained from general infection. *Tovey.* 122

Carcinoma of Stomach. DIAGNOSIS. Danger-signal: middle age, loss of weight and strength, with perhaps some dull epigastric pain. If, in spite of six or eight weeks' careful treatment, symptoms increase in severity, loss of weight becomes more out of proportion to dyspepsia, appetite leaves, and some anæmia appears, diagnosis of probable malignancy is justified and operation indicated. *Deaver.* 175

Malignant disease has been demonstrated

by X-rays, through its invasion of stomach-cavity and resulting changes in peristaltic waves. *Leonard.* 178

Carcinoma of Sigmoid and Rectum. DIAGNOSIS. 1. Early suggestive symptoms: Soreness in lower bowel, borborygmus, cramps, diarrhea, mucus, pus, or blood, difficulty in completely evacuating bowel, distention in lower abdomen, with history of having felt something move after change of position. 2. Later: Emaciation, weakness, and pain in sciatic regions and calves of legs. 3. Local examination and removal of section of diseased tissue for microscopic diagnosis.

TREATMENT. Where obstructive distention requiring prompt relief, establish artificial anus, temporary or permanent according to extent of morbid invasion. Where immediate relief not essential, operation depends upon position of growth and surrounding infiltration. Complete excision wherever possible, with anastomosis or artificial anus. Preliminary colostomy may be advisable to improve chances of recovery after excision. Where excision of a sigmoid growth not possible, anastomosis may be established in one of several ways; in case of rectal or anal growth, palliative treatment by drugs, with curettage and cauterization. Making of an artificial anus relieves pain, has low mortality as compared with excision, and often leads to distinct subsidence of growth. *Erdmann.* 169

Cataract. TREATMENT. Euphthalmin hydrochlorate in 3 or 5 per cent. solution used as mydriatic in cases of bilateral cataract where central opacity precedes cortical involvement and where iridectomy for any reason cannot be performed. Vision through the uninvolved cortical portion of the lens thus becomes possible. After using one or two drops in each eye, mydriasis begins in 20 minutes and lasts 4 to 7 hours. No untoward effects observed. *Dufour.* 165

Cellulitis with Gangrene. TREATMENT. Case of diffuse phlegmon of leg with gangrene treated successfully with: 1. Linear applications of thermocautery. 2. Subcutaneous injections of hydrogen peroxide 1 to 2 centimeters above infected area. 3. Passive hyperæmia induced thrice daily by rubber bandage above knee. 4. Daily bathing of part in warm permanganate solution. 5. Wet dressing of hydrogen peroxide. *Petit.* 173

Chilblains. TREATMENT. 1. Measures to allay co-existing irritative influences originating in various portions of body, as the naso-pharynx, teeth, respiratory or digestive tracts, etc. 2. Gymnastic exercises of extremities at hourly intervals. Arms raised above head, with alternate flexion and extension of hands and fingers. Similar movements of lower limbs. 3. Protection from cold. 4. Kneading, after raw surface of chilblain has become covered. *Jacquet and Jourdanet.* 162

Cholecystitis. TREATMENT. Irrigation with normal saline solution, at the rate of about six drops per second and with elevation of one foot, of biliary fistule, after drainage of gall-bladder for cholecystitis, cholelithiasis or cholangitis: 1. Produces prompt diuresis. 2. Hastens disappearance of chronic jaundice. 3. Often relieves post-operative biliary vomiting. *McArthur.* Page 87

Collapse from Hæmorrhage. TREATMENT. Suprarenalin or adrenalin given very slowly by intravenous method. Use 5 minims of the 1:1000 solution to a pint of warm saline solution (105° F.). In urgent cases, 10 drops may be given in 1 dram of saline solution, and repeated at intervals until heart responds. Artificial respiration hastens effects. *Sajous.* 75

Collapse in Infections. TREATMENT. Obscure collapse in infections often due to adrenal insufficiency. As soon as asthenia and lowered blood-pressure appear, administer adrenalin solution (1:1000) or cachets of glandular extract. In children give 10 to 20 drops of 1:1000 solution daily, divided into 5 or 6 doses. *Moizard.* 160

Coryza. TREATMENT. Sodium salicylate causes a cold to abort if taken within 24 to 36 hours. Single dose of 7½ grains (0.5 gram) often suffices. Taken later, it relieves symptoms and shortens attack. It is also valuable in the chronic coryza of gouty subjects. Should be taken after eating, and preferably in small doses, dissolved in half a glassful of water. *Courtade.* 174

Cystitis, Acute. TREATMENT. Collargol beneficial when used locally in this condition or in pyelitis. *Albrecht.* 234

Delirium Tremens. TREATMENT. Veronal used in 100 cases, and all but 3 benefited. Initial dose of 1 gram (15 grains) in incipient cases, repeated in 3 hours if sleep does not follow. Sleep then usually lasts 6 to 8 hours and on waking patient is quiet and feels well. If tremor is still present, 0.5 gram (7½ grains) veronal may be given. The same dose every evening prevents insomnia. Where delirium is not controlled by the first 2 grams, another gram may be given 5 to 6 hours after the second dose. One case of veronal rash noted. *Möller.* 88

Diabetes. TREATMENT. Phosphoric acid preparations valuable in diabetic cachexia. Phosphoric acid, 75 grains, acid sodium phosphate, 150 grains, distilled water, 10 ounces; one tablespoonful in water at every meal. Contraindicated where albuminuria. *Cautru.* 163

Calcium iodide used in 17 cases in doses of 5 to 15 grains three times daily, after treatment with codeine and diet had proved unsatisfactory. In all cases subjective symptoms were improved and amount of sugar in urine diminished. *H. E. Smith.* 164

X-rays projected over hepatic region cause decrease in glycosuria and rise in red blood corpuscles. In one case amount of sugar passed daily was reduced by 400 grams. Par-

ticularly effective in grave forms with emaciation and debility, less so in mild cases and those of obese type. *Ménétrier, Touraine and Mallet.* 178

Diarrhœa, Dyspeptic, of Infancy. TREATMENT. Calomel, one grain in broken doses, followed in 2 hours by castor oil, one dram. Daily irrigation of colon. If much vomiting, wash out stomach and colon, and follow by starch enema not exceeding 2 ounces. For two days give barley water, 2 fluidounces every 2 hours; for next two days, whey, 2 fluidounces every 2 hours. *Hollopeter.* 97

Digalen. This form of digitalis is not invariably free from cumulative effect, as has been claimed, but is better borne by the stomach than the galenic preparations. *Mayor.* 164

Drowning. TREATMENT. Adrenalin, 10 drops of 1:1000 solution in 1 dram of saline solution, slowly administered intravenously. Repeated at intervals until heart responds. Artificial respiration. *Sajous.* 75

Dyspepsia of Old Age. DIAGNOSIS. Of every 100 cases in persons over 65 years of age, 66 are secondary to organic disease of some important organ (kidneys, prostate, heart, lungs, liver, pancreas, chronic gout, etc.); 34 are due to degeneration of gastric and intestinal secretory structures. *Fenwick.* 24

Eczema. TREATMENT. X-rays of value in subacute and chronic forms. In vesicular variety, mild applications suffice; in squamous and pustular eczema, more vigorous treatment required. Eczema of lips, ears, axillæ and anal region especially adapted for X-rays; itching relieved. Seborrhœic eczema of face also benefited. *Müller.* 239

Emissions, Nocturnal. TREATMENT. Styptol (cotarnine phthalate) found to prolong interval between emissions to from one to three weeks in all cases. Two, then three, styptol tablets of ¾ gram each administered before retiring, for a month. Fluidextract of hydrastis, 40 to 60 drops before retiring, also recommended. *J. Koenig.* 127

Epilepsy. TREATMENT. Diet low in proteids caused reduction in number of seizures by 14 per cent. Each of the three daily meals given consisted of 125 grams of bread, 16 grams of butter, and 250 cubic centimeters of milk. *Rosanoff.* 89

Exploratory trephining advised in traumatic epilepsy. Eleven cases operated, four of idiopathic and seven of surgical epilepsy. Cysts found in two instances, cicatrices in four, and œdema of pia in all. Improvement resulted in all the cases from removal of œdematous fluid. Epileptic attacks returned in four cases. *Tilmann.* 127

Extra-Uterine Pregnancy. TREATMENT. In first half of an ectopic pregnancy operation for removal of gestation sac is indicated wherever conditions permit. In latter half, however, patient, under favorable surroundings, should be allowed to go within two or

three weeks of term before operation, meanwhile being kept under watch. Removal of placenta at operation is of cardinal importance; if this be impossible, placenta should be shut off from peritoneum by gauze. Dependent drainage through vagina should be secured. *Peterson.* Page 225

Felon. TREATMENT. Operation advised as soon as diagnosis made. Patient should eat a substantial meal before the operation, and remain in recumbent posture until half an hour after operation is over. After applying tincture of iodine, inject sterile 1 per cent. cocaine solution in a circle at root of finger; as much as 3 or 4 grams (45 minims or 1 dram) of solution may be used. If felon very small, inject instead around lesion itself, 1 centimeter from its margin. Five minutes later incise, irrigate with hydrogen peroxide and establish drainage. Rest of treatment includes bathing of part in warm peroxide (1 in 4) and sterile compresses of same. *Appelmann.* 167

Femur, Fracture of. TREATMENT. Combination of Buck's weight and pulley system with suspension by the Hodgen splint gave very satisfactory results. Traction can be accurately measured and maintained, transverse displacement corrected, and comfort greatly increased. After extension is applied, the supporting bands attached to splint are passed under limb, which is then swung clear of bed. Supporting bands are adjusted to make support uniform, and later, if desired, to exert coaptative pressure anteroposteriorly or laterally on the fragments. *Stimson.* 226

Fibroids, Submucous. DIAGNOSIS. Gradually increasing dysmenorrhœa and menorrhagia, with consequent anæmia and "nervous debility," are typical symptoms which, in a woman of thirty years or over, should lead one to suspect this condition. In differential diagnosis, enlarged uterus from subinvolution, metritis, endometritis, and pregnancy should be considered.

TREATMENT. When submucous fibroid large and sessile: hysterectomy. Vaginal operation limited to removal of polypi, owing to importance of exploration of pelvis and abdomen where tumor of some size. Transperitoneal enucleation slightly increases operative risk, but if desired by patient in order to preserve uterus, may be performed. *Truesdale.* 225

Fibrolysin. Best given by intramuscular injection in dose of 35 minims (2.3 cubic centimeters), every other day. Desired solvent effect on local connective tissues is kept up by massage of the part. Connective tissue surrounding old infectious foci may also be affected and dormant bacilli set free; hence it is well to search for and exclude previous inflammatory disturbances in every case before using this remedy. *Stocker.* 167

Fistula, Anal. TREATMENT. Posterior commissure is weakest part of anal circum-

ference. In ulcerations or small fistulas of this commissure, author makes a triangular incision with apex towards anus. In fissures, an incision $\frac{1}{8}$ inch deep is made into sphincter muscle on each side of fissure, which thus remains undisturbed at defæcation and heals more rapidly. *Brick.* 168

Furunculosis. TREATMENT. In furunculosis, carbunculosis, acne and subcutaneous abscesses brilliant results from vaccine therapy can be expected. In chronic cases, best results when a fresh vaccine is prepared from the pus every two to four weeks. Cautiously increase dose at successive inoculations. *Thomas.* 161

Gallstones. DIAGNOSIS. Too often delayed. In most cases condition begins before fortieth year. Almost every patient will give history of long-standing dyspepsia, capricious appetite, constipation, flatulence largely independent of meals, and discomfort when stomach is empty. Later, acute attacks of pain in right upper abdomen may appear, and finally true biliary colic, with vomiting. Sensation of chilliness is characteristic. Jaundice, hæmatemesis, etc., as well as laboratory methods, are practically valueless for purposes of early diagnosis from gastric and duodenal ulcer. *Deaver.* 175

Gangrene, Diabetic. TREATMENT. Currents of air heated to 150°, 300°, 500° C., or even higher, applied repeatedly, found to prevent extension of gangrene and arrest toxic absorption by producing carbonization of the part. Amputation can then be performed with greater safety. *Dieulafoy.* 223

Goiter, Exophthalmic. ETIOLOGY. Acute rheumatism occupies an important place among infections which lead to development of Graves's disease. *Souques.* 165

Gonorrhœa. TREATMENT. Vaccine therapy caused marked improvement or cure in subacute and chronic cases. Functional results good. *Thomas.* 161

Hæmophilia. TREATMENT. General: Tonics and a liberal diet. Calcium lactate beneficial for a short time, after which coagulation time again lengthens; if the drug be then left off a few days, its effect will again be exerted when resumed. For local hæmorrhages: Sterilized gelatin or adrenalin compresses, or simple pressure; sterilized gelatin solutions injected subcutaneously also effective. For hæmophilic joints: Pressure and absolute rest. Massage over parts slightly distant from joint to be cautiously begun a few days after development of effusion. If hæmorrhage produces great tension in joint, paracentesis of joint followed by injection of adrenalin solution should be the extent of operative interference. Pregnancy in hæmophilic women: Any indication of hæmorrhage warrants induction of labor. If this refused, give general tonic treatment and calcium lactate a day or so before expected confinement. *Larned.* 228

Hæmorrhage. TREATMENT. Adrenal preparations valuable in capillary hæmorrhage from pharyngeal, œsophageal, gastric or intestinal mucous membranes. Mastication of tablets of adrenal substance, or ingestion of 5-grain capsules of same, causes vaso-constriction. *Sajous.* Page 75

Heart, Dilatation of. TREATMENT. In asthenic cardiac disorders with dilated right ventricle, dyspnoea and possibly cyanosis and œdema, the adrenal principle improves oxidation and metabolism in the cardiovascular muscles and tissues at large. Tablets of $\frac{1}{2}$ to 2 grains of desiccated gland after meals. *Sajous.* 75

Heart, Neuroses of. TREATMENT. In cardiac irritability: 1. Caffeine citrate and tincture of strophanthus, both best given in tablet-triturate, are promptly effective. Caffeine relieves headache and vertigo when present. Cactus useful in some cases; acts more slowly. 2. Local applications, as cologne, spirits of camphor, ammonia. 3. Light and easily assimilable diet. Avoid meats. 4. Quiet and rest for weeks at a time. 5. Nerve tonic: combined glycerophosphates of lime and soda, gr. v-x t.i.d. after meals. 6. Where gastric or intestinal intolerance: milk of bismuth or lactobacilline tablets. 7. To promote sleep: gentle massage of lower limbs before retiring. If hypnotic required, bromural, gr. v-x. *Beverley Robinson.* 163

Hernia. TREATMENT. A truss never cures a hernia in adult life, and rarely during childhood. Losses from disability due to hernia avoided only by early radical operation. *A. C. Wood.* 20

High Enemata. Only where the sigmoid is abnormally developed can a soft rubber tube be introduced higher than six or seven inches in rectum. Short tube six inches long best for all sorts of enemata when using water for faecal evacuation. It is possible to cleanse entire colon by using a short tube of $\frac{1}{2}$ inch caliber. *Soper.* 61

Hyperchlorhydria. DIAGNOSIS. Excess of free HCl alone does not warrant a diagnosis of primary hyperchlorhydria, which shows variable symptoms, both gastro-intestinal and nervous. Though 31.6 per cent. had lost weight, the appetite was generally good and examination of the gastric contents and faeces showed that digestive power was but little impaired. The nervous manifestations included periods of depression and mental confusion, irritability, various phobias, numbness, paræsthesias, and attacks of faintness. Male sex and constant mental strain seemed to be predisposing factors. *G. M. Piersol.* 65

Ileus, Paralytic. TREATMENT. Atropine found valuable in 8 cases. Inject 1 milligram ($\frac{1}{44}$ grain) hypodermically and follow shortly after by a stronger dose of 3 to 5 milligrams ($\frac{1}{22}$ to $\frac{1}{43}$ grain). Improvement and abundant faecal discharge within 10 hours. *Lederer.* 229

Incontinence of Urine. TREATMENT. In persistent or increasing incontinence following labor operation is usually necessary. In the average case the Frank operation, combined with anterior and posterior colporrhaphy and an appropriate operation for retroversion when required, will bring about a cure. In marked dilatation of the urethra of long standing or where the muscular wall of the neck of the bladder and urethra have atrophied, Gersuny's operation offers best hope of cure. *Miller.* 90

Infant Feeding. Salts of cow's milk sometimes cause tendency to convulsions; treat by temporary salt-free diet. Sugar intoxication or intolerance of fats may likewise exist; treat by elimination of these from diet. *Neff.* 24

Intussusception. TREATMENT. Lateral anastomosis performed in 2 acute cases and advocated in preference to resection because of its comparative simplicity and safety. Tumor was found to disappear subsequent to operation. Not applicable, however, to gangrenous cases. *Parry.* 125

Iodine. As skin disinfectant. Some hours before operation field is shaved dry and painted with 10 or 12 per cent. tincture of iodine. Dry sterile dressing. Painting repeated on operating table. Author shaves and thoroughly cleanses skin 12 hours before iodine applied. Primary union in every case. *Jewett.* 63

Leprosy. TREATMENT. Oil of chaulmoogra is best given as a saponified preparation, in keratin-coated pills; the purified oil can also be injected in doses of 1 gram three times a week. Nastin injected in doses of 1 cubic centimeter gave good results. Great persistence in treatment, even after relief of symptoms, found advisable. Local treatment by resorcin, hydrogen peroxide, ichthyol, thiosinamine, etc., and baths, also useful. *Kupffer.* 169

Lupus Erythematosus. TREATMENT. Constitutional: regulation of diet to avoid overloading intestine; coffee or tea contraindicated; quinine often useful. Local: in hyperæmic stage, cooling lotions and ointment of subacetate of lead, ichthyol lotion or ointment; in chronic cases, strong solution of ichthyol or iodine liniment; in severe conditions, linear scarification or light touches of thermocautery. High-frequency currents in subacute cases, Finsen light, X-rays or radium in chronic cases: particularly useful where thickening of the integument. *Morris.* 63

Meningitis, Cerebrospinal. TREATMENT. Lumbar puncture as soon as distinct meningeal symptoms noted, draining away spinal fluid,—the more, the better. Next inject Flexner antimeningococcus serum in spinal canal; quantity of serum should equal but never exceed quantity of fluid drained away. If lumbar puncture yields dry tap, and meningeal symptoms continue, aspirate

lateral ventricles, if in an infant, through anterior fontanelle, and if in an older child, by the Kocher method: Shave small patch of scalp and make one-inch linear incision 3.5 centimeters from sagittal line and 5 centimeters anterior to sulcus centralis. Expose bone and perforate it with Doyen perforator followed by a burr, leaving cup-shaped fossa and exposing dura. Gently insert hollow exploratory needle, with blunt point and side-openings, perpendicularly into second frontal convolution; at a depth of 4 to 5 centimeters ventricle is readily found, particularly if distended. If pus present, drain ventricle and then wash with normal saline until fluid returns clear. Inject 20 to 25 cubic centimeters of serum. Repeat this procedure daily until tapping of ventricles is negative. If symptoms of intracranial pressure, as vomiting or convulsions, appear immediately after injection, however, repeat procedure only once in 48 or 72 hours.

Case of an infant two months old reported, in which intraventricular method of treatment led to complete recovery. Infant was fed at the breast, bowel function insured by enemas or an occasional dose of castor oil, and diuresis promoted by giving water. *Fischer.*

Page 129

Nausea, Postanæsthetic. TREATMENT. Olive oil given by mouth in thirty cases of ether anesthesia, after partial restoration of consciousness. In only one patient was nausea observed after its use. Where nausea had already begun it was at once checked by administration of the oil. *Graham.*

91

Nephritis, Acute. SURGICAL TREATMENT. Case of severe acute nephritis in a man 25 years of age, with no urine passed for 5 days, saved by decapsulation of both kidneys (Edebohl's operation). A few hours after operation both kidneys resumed function. *Karo.*

43

Nephritis, Chronic Interstitial. TREATMENT. 1. Diet. Fairly full diet combined with free elimination usually gives best results. A little meat with short fiber (as mutton, chicken) may be allowed at noon, and in morning or evening some fish; vegetable food, preferably farinaceous; milk freely; stimulants prohibited. Urine and general condition of patient should be watched in relation to diet. 2. Hygiene. Freedom from anxiety and overwork; moderate exercise; warm, dry and equable climate. 3. Physical measures. Free sudation by hot air baths, vapor baths, or hydrotherapy, carefully avoiding renal congestion. 4. Drug therapy. Sodium iodide, gr. xv-xxx, sodium phosphate, gr. xxx-xlv, sodium chloride, gr. xc, water Oij; to be taken freely as a drink. Purgatives. Where marked anemia: Basham's mixture or triple arsenates with nuclein. In failing compensation: digitalin combined with a vasodilator, as one of the nitrites (at first in small doses). Veratrine (0.5 milligrams or gr. $\frac{1}{134}$ every half hour

until pulse relaxed) is a safe and effective vasodilator for continued use. In bad cases opium in small doses (2 to 4 minims of deodorized tincture) strengthens heart and dilates arterioles. When complications occur, stimulants, diuretics, purgatives and diaphoretics may be indicated. In dyspnoea, quebrachine hydrochlorate or aspidospermine valuable. *Builer.*

171

Neuralgia. TREATMENT. One to two grains of 1 : 1000 adrenalin ointment applied to skin over affected area in neuralgia and neuritis produces ischemia of the hyperæmic nerves and thus arrests pain. *Sajous.*

76

Obesity. TREATMENT. Strict vegetable diet for 4 to 6 weeks, then 150 to 200 grams of lean boiled meat 3 times a week or once daily. This diet kept up for months, and tends to protect from returning corpulence. If weight begins to increase, drop meat again for 4 to 6 weeks. Such diet best corrects obese tendencies without impairing general health. Supplement by exercises and hydrotherapeutic measures. *Albu.*

25

Osteomalacia. TREATMENT. In a case of non-puerperal osteomalacia, after two years in bed and failure of all other measures, suprarenal extract given according to Bossi's technique. From 8 to 10 injections of 1 cubic centimeter made each month. By the thirtieth injection great improvement was manifest, and in time the entire syndrome arrested, with almost complete restoration of function. *Bernard.*

92

Otitis Media, Chronic. TREATMENT. Perhydrol in 2 to 6 per cent. solution found useful. Patient drops solution into ear and remains on side for 10 minutes; auricle is then dried and cotton inserted in meatus. Where much suppuration, repeat morning and evening. Inspissated pus is dislodged, and cholesteatoma also yields. *Bresgen.*

125

In late stages:—If tube diseased: inflation, with bougie if stenosis exists. Intratympanic injections of menthol oil, iodine solutions, pilocarpine, menthol giving best results. Where fixation of the ossicles: pneumomassage; injection of fibrolysin sometimes valuable. Operative measures: mobilization of the malleus, synechotomy and tenotomy of the tensor tympani, eventual excision of the malleus and incus. *Yearsley.*

61

Patella, Fracture of. TREATMENT. In all compound fractures, prompt operative intervention is demanded. In subcutaneous fractures, operation may be deferred from 3 to 5 days. In the interval flexion is prevented by a posterior plaster-of-Paris splint, and absorption of fluid hastened by compression with gauze or elastic bandages. In operating, prepatellar fibroperiosteal tissues must be sutured, and all tears in soft tissues surrounding patella carefully repaired. To assist in maintaining apposition of bony fragments, patella is circumferentially looped by a ligature passed close to its periphery and imbedded in the quadriceps tendon and

ligamentum patellæ midway between their anterior and posterior surfaces. Where separation slight and prepatellar tissues practically un torn, procedure may be limited to looping fragments and fortifying prepatellar tissues by V-shaped kangaroo tendon sutures, without entering joint-cavity. Otherwise, all fluid and clots in joint and subquadricepial *cul-de-sac* may be removed by gauze swabs mounted on artery forceps; irrigation inadvisable. While patient still under anæsthesia, apply moulded and padded plaster-of-Paris splint covering posterior and lateral surfaces of limb, with leg in full extension and thigh slightly flexed. This splint is to be used for about a month. First motions of patella should be lateral. Begin cautious flexion of knee one month after operation.

Heineck. Page 114

Pelvic Inflammation. TREATMENT. Abscess. Simple vaginal incision with drainage; if condition becomes worse, abdominal section, by extraperitoneal method if possible, should be attempted. *Esch.* 62

Hot mud compresses over abdomen recommended in chronic exudative adnexal inflammations and pelvic exudates. The heat is much better borne than in hot water applications, and 10° C. greater heat can be applied. If surface be covered with woollen cloths, heat retained for several hours. Causes hyperæmia and promotes removal of exudate. Contraindicated in acute cases. *Cukor.* 63

Pemphigus. TREATMENT. Quinine in large doses used in two severe cases with pronounced benefit. One patient was given 23 grains daily for two weeks, then 31 grains daily. No tinnitus, vertigo or vomiting resulted. *Bergroth.* 230

Pericarditis. ETIOLOGY. Myocardial degeneration, leading to dilatation, predisposes to pericarditis. Overaction of heart may induce pericardial inflammation. Chronic adhesive pericarditis frequent but often impossible of diagnosis, serious symptoms arising only when myocardium itself is diseased. *Brooks and Lippencott.* 26

Peritonitis. PROGNOSIS. Degree of improvement in circulation caused by intravenous saline infusion is an index of the extent of vasomotor paralysis, the effect persisting in proportion to recuperative power of vessels. If infusion causes no circulatory improvement little benefit can be anticipated from operation. *Lichtenberg.* 126

TREATMENT. Restrict the amount of tamponing and never insert a tampon between loops of intestine. Fowler position always exerts favorable influence. *Dege.* 64

Peritonitis, Tuberculous. TREATMENT. Air injected in peritoneal cavity after paracentesis in three cases of the exudative type, with recovery. After removal of exudate by trocar, air is forced in by emptying water from a large syringe into the aspirator jar. *Florio.* 238

Phenolphthalein. Acts in about 6 hours and has no constipating after-effect. Sometimes loses its effect on continued use, and may cause diarrhoea. Dose: 3 to 5 grains *t.i.d.*, in powder, pill or capsule. Five grains is probably the largest safe dose. In a child, begin with $\frac{1}{2}$ grain. *Gilbride.* 172

Pleural and other Effusions. TREATMENT. To prevent recurrence, after aspiration, of serous effusions into the pleura, peritoneum, tunica vaginalis, etc., 8 minims to 2 drams (according to size of cavity) of suprarenalin or adrenalin in four times the quantity of saline solution, may be injected into the cavity. *Sajous.* 76

Strong galvanic currents employed in serous effusions, using as positive electrode a cotton wad soaked in 10 per cent. sodium bicarbonate solution and as negative electrode one soaked in 5 per cent. tartaric acid. Daily applications of one hour, with current of 15 or 20 milliampères, gradually and cautiously increased up to 50 or 60. Fluid promptly reabsorbed in many cases of peritoneal, pleuritic and even pericardial effusion. *De Renzi.* 234

Pleurisy, Syphilitic. DIAGNOSIS. All serous exudations in syphilitics cause deviation of the complement; hence a diagnosis of syphilitic pleurisy, as distinguished from pleurisy of other origin in a syphilitic, must be based on data other than the serum reaction. *Roger and Sabarèanu.* 173

Poliomyelitis, Epidemic. PROPHYLAXIS. Nasal and buccal secretions should be disinfected. *Fleener and Lewis.* 231

Pyelitis in Infants. DIAGNOSIS. Of 9 cases in children ranging in age from 9 months to 2½ years, six had high fever, five, frequent micturition, three, chills, one, pain, and one, tenderness in lumbar region. None vomited. Diagnosis depends on urinary findings: pus, epithelial cells, occasionally blood corpuscles, and no casts.

TREATMENT. Urotropin, $\frac{1}{2}$ to $\frac{3}{4}$ grain every two hours, very effective. *Gray.* 174

Pyloric Spasm of Infants. TREATMENT. High rectal instillations of Ringer's fluid (Sodium chloride, 7.5 grams, potassium chloride, 0.42 gram, calcium chloride, 0.24 gram, boiled water, 1 liter) gave good results. Half a liter of solution is introduced in 2 hours, and the procedure repeated morning and evening. Vomiting ceases after a few days' treatment. *Rosenstern.* 232

Rheumatic Heart Disease. DIAGNOSIS in children. 1. Subcutaneous nodules generally indicate active cardiac disease. 2. Evening fever without previous cause suggests fresh cardiac inflammation. 3. Joint pains. 4. Sudden appearance or increase in anæmia. 5. Persistently frequent pulse. *Carr.* 26

Septicæmia. TREATMENT. In the presence of persistently low blood-pressure, hypothermia, and cyanosis, adrenalin is valuable when very slowly administered intravenously in the

proportion of 5 minims of the 1:1000 solution to a pint of warm saline solution (105° F.). It enhances pulmonary and tissue respiration and the activity of the immunizing process. *Sajous.* Page 75

Collargol found valuable in septicæmia and pyæmia of medium gravity, as well as in obstinate febrile states due to reabsorption of toxins and associated with anæmia. Should be given in all cases of puerperal infection. It is best administered by slow intravenous injection of 1 to 2 c.cm. of a 5 or 10 per cent. suspension. Probably acts as a catalytic, accelerating oxidation. *Albrecht.* 234

Shock. TREATMENT. Suprarenalin or adrenalin, very slowly administered intravenously; 5 minims of the 1:1000 solution to the pint of warm saline solution (105° F.). In urgent cases, 10 drops may be given in 1 dram of saline solution. Artificial respiration hastens effects. *Sajous.* 75

Shock, Post-Operative. PROPHYLAXIS. Pituitary extract (1 cubic centimeter of 20-per-cent. solution of posterior lobe) was injected in three cases before complete recovery from the anæsthetic, in conjunction with normal saline by rectum. The pulse, previously barely perceptible, almost at once became large and bounding, slow, and regular, this effect lasting 12 to 16 hours. *Wray.* 93

TREATMENT. In shock after abdominal operations, remove two skin-sutures near navel and insert glass tube joined by rubber tubing to receptacle containing saline solution at 112° F. Pass the tube upward beneath omentum and transverse mesocolon to region of solar plexus, and run in one pint of hot saline, causing rise of blood-pressure by heat and pressure stimulation of sympathetic system. Remove tube, cover wound with gauze, and apply binder to sustain pressure. Inject 10 ounces of hot saline in rectum every 2 hours. *Hopkins.* 159

Skin Growths and Ulcerations. TREATMENT. Powdered potassium permanganate used as a caustic for benign and malignant neoplasms, lupus, keloids, chancroids, cavernous angiomas, etc. Surrounding healthy skin is protected by rings of adhesive plaster piled one over the other, with central opening slightly larger than area to be cauterized. Powdered permanganate is then poured in and covered over with adhesive. After 48 hours, a softened mass alone remains of the growth. Upon removing this a sharply-defined depression is revealed, which heals rapidly. The procedure is usually painless. *Finck.* 232

Splenic Enlargements, Primary. TREATMENT. Iron, arsenic, iodine, glandular and marrow extracts have only a temporary or uncertain action in these conditions. X-rays cause general improvement in Banti's disease, and should be projected over the spleen through an aluminium screen. Except in infantile splenic anæmia, splenectomy is,

however, often preferable in that it yields lasting benefit. *Bozzolo.* 175

Stricture of Urethra. TREATMENT. OPERATIVE. Median incision down to urethra, dividing structures of bulb in median line. Divide stricture by longitudinal incision 1½ inches long. Remove excess of scar tissue, or excise whole strictured portion if necessary. Mobilize anterior segment of urethra and join to posterior segment without tension, sutures being passed from without inward. If roof of canal has been left intact, bring together margins of longitudinal incision transversely, as in pyloroplasty. When ¼ of circumference sutured pass No. 28 sound into urethra; complete the sutures around it. Open urethra on the sound at a point as far behind stricture as possible and introduce No. 12 (English) soft rubber catheter. Suture wound in layers, leaving space at lower angle for catheter. Resection applicable to all strictures of bulbomembranous portion not amenable to gradual dilatation and not complicated by infiltration of urine or fistulas. *Cabot.* 126

Suprarenin. Poisonous dose varies with the individual. Danger arises from: 1. Concentration of solution used. Large amount of a weak solution is without danger. 2. Method of introduction. Intravenous injection gives immediate bad effect; locally or subcutaneously it is well borne. Author employs solution of 0.64 gram suprarenin borate in 100 cubic centimeters of 0.5 per cent. novocaine, made up fresh from tablets for each operation; 125 cubic centimeters of such solution used without danger. *Braun.* 127

Syphilis. TREATMENT. Mercurool found useful to alternate with the protiodide and in cases where the ordinary preparations of mercury cannot be assimilated; gr. j three or four times daily. Author advocates course of twenty inunctions of the official ung. hydrarg. at the outset of every case of syphilis, before beginning internal administration. Where latter causes serious gastro-intestinal disturbance, and the symptoms of the disease are marked, inunction treatment is to be adopted. Course of three weeks of inunctions in the spring and fall for four or five years recommended. In cases of ulcerating tubercular syphiloderma and gummata best results obtained using potassium iodide (gr. x-xx t.i.d.) along with mercurial inunctions twice daily. Mercury is as valuable in tertiary as in secondary syphilis. *Christian.* 45

Tabes. TREATMENT. Strychnine in gradually increasing doses arrested progress of the condition in almost all cases. Begin with ¼₆₀ grain t.i.d., increase to ¼₆₀ at end of first week, to ¼₆ at end of second, then add one drop of a solution of 1 grain of strychnine in 1 ounce of water. Increase by a drop every day till total dose is ¼ grain t.i.d., which is maintained for 3 months. Then increase as before until ¾₆ is reached, maintain for 3 months, etc. Maximum dose of ½ grain being reached, it is maintained for a year, then

gradually reduced. Results obtained: pains disappeared, bladder and bowel control regained, locomotion much improved; general amelioration. *Hammond.* Page 236

Tetany. TREATMENT. Infundibular extract (20 per cent.) of Burroughs, Wellcome & Co., recommended; given by intra-muscular injection in doses of 7 drops *t.i.d.*, or oftener. If used subcutaneously it might cause necrosis of skin by vaso-constriction. Not poisonous. *Ott and Scott.* 99

Tetany, Gastric. TREATMENT. Soluble calcium salts rapidly control symptoms in the tetany of gastrectasis; continued use required. Large saline infusions, as well as parathyroid preparations (nucleoproteid) by the mouth, are but slightly effective. *Kinnicutt.* 123

Tic. DIAGNOSIS. True tic, which is of psychic origin, and is a sequel to the unhindered repetition of a once voluntary purposive act, is distinguished from spasm, which is due to irritation of any reflex arc of the bulbo-spinal tract, as follows: 1. Movement slower. 2. Occurs in volleys. 3. No muscular weakness. 4. Reflexes normal. 5. Painless. 6. Disappears in sleep. 7. Pseudo-coördinate and intentional. 8. Influenced by volition or emotion, and followed by satisfaction. Upon this distinction depends whether treatment shall be surgical, medical or psychotherapeutic. *T. A. Williams.*

Toxæmia of Pregnancy. TREATMENT. Failure of thyroid gland to hypertrophy during pregnancy probably related to toxæmia. Administration of thyroid beneficial by supplying this deficiency and by diuretic action. Saline extract of fresh human thyroid proteids more rapid and reliable in action than ordinary sheep thyroids. Hypodermic use of thyroid proteids greatly superior to oral use. *Ward, Jr.* 27

Traumatic Neurosis. DIAGNOSIS. In response to galvanism the anodic closure contraction equals or surpasses the cathodic closure contraction, as in the reaction of degeneration, but in tracings of muscular contractions the peaks are not rounded as in the reaction of degeneration but sharp and angular as with normal contractions. Increased excitability is observed on both affected and sound sides. *Larat.* 124

Tuberculosis, Pulmonary. DIAGNOSIS. X-ray method contributes to early diagnosis. Where symptoms point to pulmonary lesion but no physical signs are demonstrable, radiography may show peribronchial infiltration or enlarged bronchial glands. Later, consolidated areas and cavities can be accurately located at any depth within the lung. *Leonard.* 177

TREATMENT. Mercury succinimide administered hypodermically in 8 cases caused general improvement and appeared to exert a marked controlling influence over the tuberculous process. *Freeman.* 90

Beechwood creosote given both internally and by inhalation affords much relief to

symptoms in nearly all cases and in all stages. It is also valuable as a preventive in those predisposed or exposed to the infection. Rest, fresh air, proper food, with or without lime salts. *Beverley Robinson.* 23

Menthol ointment (30 or 40 per cent.) used with benefit. It is rubbed in daily for 10 minutes, skin of back, chest and thighs being successively employed. Improvement manifest alike in symptoms and physical signs. Probably acts directly on involved tissues. Treatment should be persisted in for 4 months or more. Also valuable in old fibroid pneumonias. *Stepp.* 238

Early tuberculosis treated by antiseptic inhalations with remarkable results. Solution used: Phenol, creosote, spirits of chloroform, of each 8 cubic centimeters (f3ij), tincture of iodine, spirits of ether, of each 4 cubic centimeters (f3j). Of this 6 to 8 drops are poured on the felt or sponge of Yeo's perforated zinc inhaler, and inhaled regularly every hour in the daytime, as well as 2 or 3 times during the night, when patient is awake. Cough is thereby relieved without sedatives and expectation facilitated. Where hæmoptysis, add turpentine to the solution. In all cases patient should rest in bed for a week, with windows of bed-room open. In second week he may rise for an hour or two daily, and later walk in the open air every morning. When temperature is normal, use of inhaler may be gradually left off. *Lees.* 93

Tuberculosis, Superficial. TREATMENT. Mercury succinimide (gr. $\frac{1}{2}$ subcutaneously every other day) with mercury protiodide (gr. $\frac{1}{4}$ by mouth *t.i.d.*) gave good results in two obstinate cases of scrofuloderma and one of pharyngeal infiltration. Curetting, cauterization and X-rays ineffective until mercury added. *Hertzberg.* 25

Typhoid Fever. INTESTINAL PERFORATION. Mortality after operation for perforation in children is below 50 per cent.—25 per cent. lower than in adults. *Jopson and Gittings.* 25

RUPTURE OF SPLEEN. This accident occurs most frequently in beginning of the third week, or in convalescence. The enlarged typhoid spleen should be merely touched daily, not handled. PROPHYLAXIS: Ice-bag to the spleen. DIAGNOSIS: Preliminary pain under left costal arch, sudden increase of pulse-rate by 20-30 beats, evidence of internal hæmorrhage, followed by rapid rise of temperature; liver dullness not obscured; X-rays. TREATMENT: Immediate saline infusion and Fowler's position, splenectomy, followed by continuous peritoneal lavage with two glass tubes, below diaphragm and above pubis. *Bryan.* 28

TREATMENT. Alcohol compresses to the abdomen in children advocated in preference to the cold tub-bath treatment, which author regards as favoring hæmorrhage or perforation and as liable to work injury to the heart. Compresses used in 12 severe cases which were rendered milder. Pad of absorbent cotton or eight thicknesses of gauze wrung out in 85 per cent. alcohol (90 per cent.

for adults), applied to abdomen, covered with cold water gauze compress, and held in place by flannel band. Water compress renewed every hour, alcohol compress every 2 hours. Acts by local active hyperæmia, while alcohol absorbed stimulates heart. Used also in peritonitis and appendicitis with benefit. *Cheinisse.*

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Ulcer of Leg, Syphilitic. TREATMENT. Reduce alcohol consumed. Mercury and iodides, preferably organic iodides, well diluted, alternated with courses of strychnine particularly when ulcer again becomes sluggish. General antiseptic application: Boroglyceride 3j, hot water Oss. Locally, black or yellow wash; solution of phenol (1 to 100); tincture of iodine (1 to 4 or 5 of hot water); ammoniated mercury or yellow oxide ointments. Dry treatment: Zinc oxide 3iij, calomel, 3ss, infusorial earth q. s. ad. 3j. X-rays have benefited some cases. Where ulcer resists cure due to tethering of its edge to underlying bone, apply antiseptic fomentations, scrape ulcerated surface with Volkman's sharp spoon, undercut edges with scalpel, and draw them together, freshening skin-margins. *W. Evans.*

23

Uncinariasis. DIAGNOSIS. In mild cases eosinophilia is often not available for diagnosis. Following method recommended: Dilute fecal material ten times with water and centrifugate at high speed for 6 or 8 seconds. Pour off supernatant fluid, shake sediment with water, and centrifugate again just long enough to throw eggs to bottom (usually 2 seconds). Repeat once or twice, remove sediment with pipette and examine

for eggs. Calcium chloride solution assists in removal of debris. Large amounts of feces may have to be examined before eggs discovered. *Bass.*

168

Vomiting in Infants. TREATMENT. Condition often a mere habit, vomiting reflex being established owing to former injudicious feeding. Administer chloral, bromide or chlorotone until habit is broken; or better, exhaust the vomiting center by giving harmless emetic, as wine of ipecac and carbonate of ammonium, half an hour before feeding. Latter method used in 55 cases; immediate cure in 30, and improvement in 10. *Pritchard.*

239

Vomiting of Pregnancy. TREATMENT. Adrenalin used with success in a case previously uncontrollable. Ten drops of 1 to 1,000 adrenalin solution given morning and night, at first in enema of 150 grams (5 ounces) water with 20 drops of laudanum, after 3 days in ice-water by the mouth. Nutrient enemata also given. Vomiting ceased on second day, and on third patient could retain a little food. Recurrence of nausea toward end of pregnancy relieved by 10 drops daily for 5 days. *Rebaudi.*

94

Whooping-Cough. TREATMENT. Oxygen used in 30 cases. It is given at each paroxysm. Cyanosis subsides and suffocation is prevented. Child keeps in good condition with appetite throughout. It is best inhaled through a funnel; 10 to 12 liters necessary to control a paroxysm. Where broncho-pneumonia threatens, oxygen should be inhaled every hour; it renders lung aseptic. *Weil.*

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Book Reviews

TUBERCULOSIS. A Treatise by American Authors on Its Etiology, Pathology, Frequency, Semiology, Diagnosis, Prognosis, Prevention, and Treatment. Edited by Arnold C. Klebs, M.D. Octavo of xxx + 939 Pages, with 3 Colored Plates and 243 Illustrations in the Text. New York and London: D. Appleton & Company, 1909. Cloth, \$6.00.

The author's purpose of presenting a continuous and systematized discussion of the whole subject by men especially competent to analyze and discuss its various subdivisions is admirably carried out in the work before us. The list of these and of the subjects allotted to each contributor is a guarantee of the thoroughness of the work as a whole: Edward R. Baldwin: Resistance, Predisposition, and Immunity, Individual Prophylaxis; Jarvis Barlow: Climatic Therapeutics; Hermann M. Biggs: Introduction to Prophylaxis; Lawrason Brown: Specific Treatment; Thomas D. Coleman: Tuberculosis Among the Dark-skinned Races of America, Home Treatment by Sanatorium Methods; Leonard Freeman: Tuberculosis of the Lymph Glands, Muscles and Fasciæ, Ischiorectal Region and Genito-Urinary System; Ludwig Hektoen: Tubercle and Morbid Anatomy; Richard H. Hutchings: Frequency of Tuberculosis in Insane Asylums; Arnold C. Klebs: Frequency of Tuberculosis, The Sanatorium, its Construction and Management; S. Adolphus Knopf: Public Measures in the Prophylaxis of Tuberculosis; L. L. McArthur: Tuberculosis of the Bones, Joints, Brain, Intestines and Peritoneum; Charles L. Minor: Symptomatology and Diagnosis; William Osler: Historical Introduction; Clemens von Pirquet: Tuberculosis in Childhood; Mazzyck P. Ravenel: Etiology—The Tubercle Bacillus; Henry Sewall: The Physiology of Climate; Edward L. Trudeau: Introduction to Treatment; Gerald B. Webb: Specific Therapeutics of Mixed and Concomitant Infections.

On the whole, each collaborator may be said to have contributed an excellent monograph, the aggregate of which makes up a work of great value to the medical profession.—
C. E. DE M. S.

DISEASES OF THE STOMACH AND INTESTINES. By Robert Coleman Kemp, M.D., Professor of Gastro-intestinal Diseases, New York School of Clinical Medicine; Visiting Gastro-enterologist to the New York Red Cross Hospital; Consulting Physician in Gastro-intestinal Diseases to the Manhattan State Hospital, etc. Octavo of 766 Pages, with 279 Illustrations. Philadelphia and London: W. B. Saunders Company, 1910. Cloth, \$6.00, net; Half Morocco, \$7.50, net.

This new addition to the already lengthy list of works on diseases of the alimentary tract is justified, we believe, by certain more or less distinctive features which the volume presents. It was written especially for the general practitioner, and is, indeed, one of the most intensely practical works it has been our privilege to review. The author has selected the simplest and most efficient methods of diagnosis and treatment, and described these in a most satisfactory manner. All material having little or no direct clinical bearing has been omitted. The work is strictly up-to-date, containing numerous references to the literature of 1908 and 1909, and including all the newer diagnostic and therapeutic methods. It begins with short and concise chapters on the anatomy of the stomach and intestines, the physiology of digestion, history-taking, and the general methods of physical examination. An excellent description is then given of the special methods, physical and chemical, of examining the stomach and ascertaining its functional state. This is followed by a chapter on diet, containing a résumé of the articles of food appropriate in various disease conditions, and a number of calorimetric tables. We learn that the author is a firm believer in Chittenden's principle of low proteid requirements. Local treatment of the stomach is next taken up. Gastric lavage is admirably described and illustrated. The succeeding chapter is on massage, vibration, hydrotherapy, counterirritation, and orthopedic appliances. The various gastric diseases are then dealt with, special emphasis being laid on diagnosis and treatment. The author frequently states his experience with the various modes of treatment described. Separate chapters are devoted to achylia gastrica and dyspeptic asthma. The sections on acute dilatation and Glénard's disease are unusually full. Clear differentiation is made between ulcer and erosion of the stomach. The portion of the work devoted to the stomach ends with a chapter on the gastric functions in diseases other than those of the digestive tract. The second half of the book deals with the intestinal diseases, and is equally as satisfactory as the first. We would call special attention to the chapters on dysentery, typhoid fever, appendicitis, and diverticulitis, which will be found to embody all the newer ideas on these conditions. Under appendicitis a full description of Head's zones of cutaneous hyperalgesia is included. The work concludes with a chapter on intestinal parasites and a good index. The illustrations are plentiful and many of them are photographs demonstrating the methods of diagnosis and treatment which are described in the text. Altogether, the book is highly commendable. It will unquestionably prove very attractive to the practitioner.—
L. T. DE M. S.

OPERATIVE SURGERY. For Students and Practitioners. By John J. McGrath, M.D., Professor of Operative Surgery at the New York Post-Graduate Medical School; Consulting Surgeon to the New York Foundling Hospital, etc. Third Revised Edition. Octavo of xiv + 653 Pages, with 276 Illustrations, including many Full-Page Plates. Philadelphia: F. A. Davis Company, 1909. Cloth, \$5.00, net.

The third edition of Dr. McGrath's treatise resembles the former issues in its general plan, though numerous changes have been made in the matter presented. The section on abdominal surgery, in particular, has been rewritten and much amplified. The book is divided into ten parts, the first of which consists of a brief discussion of general subjects such as anæsthesia, methods of controlling hæmorrhage, sutures, etc. The author then enters at once upon the consideration of regional operative surgery, to which the remaining nine parts and the main bulk of the volume are devoted. The description of the various operations performed on a given structure is in each case preceded by a section on the surgical anatomy of the part, intended to facilitate comprehension of the operative procedures. The ligations, amputations, excisions, etc., which figure so largely in many works on operative surgery, have been chiefly relegated to the final two chapters of the book, dealing with the surgery of the upper and lower extremities. In general, the descriptions are admirably written, and the author has well succeeded in presenting the various procedures in a most readable form. Especially valuable is the portion of the book devoted to abdominal surgery, in which all the well-known operative methods are fully considered. The section on congenital deformities of the face is unusually clear and full. While we miss a certain few subjects, such as the general surgical treatment of aneurisms and that of osteomyelitis, the work is in

most respects complete and will be found amply sufficient by the practitioner for all ordinary purposes. It is an excellent book for the undergraduate. The illustrations are well selected and form a useful feature of the work, which we take pleasure in recommending.—
L. T. DE M. S.

CLINICAL MANUAL FOR THE STUDY OF DISEASES OF THE THROAT. By James Walker Downie, M.B., F.F.P.S.G. Lecturer on Diseases of the Throat and Nose, University of Glasgow; Surgeon for Diseases of the Throat and Nose, Western Infirmary; Hon. Aurist, Royal Hospital for Sick Children; Member of the Council and Examiner in Otology and Laryngology for the Fellowship of the Faculty of Physicians and Surgeons, Glasgow. Second Edition. Revised and in large measure Rewritten, with 104 Illustrations. Glasgow: James Maclehose & Sons, Publishers to the University. New York Publishers. The Macmillan Company. 1909. Price, \$3.25, net.

This edition has been practically rewritten and brought up to date, and is especially distinctive from its predecessor by the addition of much new matter. The arrangement of the text, the division of the various subjects, and the selection of suitable headings, permitting of ready and easy reference, show a keen knowledge of the needs of students and practitioners, for whom the book was compiled. Adding much to its value is the incorporation within the text of the history of numerous interesting cases occurring within the private practice of the author. The various illustrations indicate care in their selection, and the colored plates appear well executed.

Notwithstanding the many commendable features about this small volume and the necessity of being concise in order to keep the text within a certain limit, we cannot help but feel that tonsillar operations are dismissed with too little consideration. The ring guillotine and the spade tonsillotome are the only two instruments discussed, with no provision in the way of a tonsillar punch or other means for the removal of any tissue that might remain after the use of either one of these instruments. The cold wire snare, which is being extensively used at the present time, especially in this country, is disposed of with eight words. Enucleation by dissection with forceps and scissors is not considered, although mention is made of extirpation by scissors and the finger, in which method the scissors are merely used to cut through the mucous membrane.

In discussing the lodgment of foreign bodies in the throat, their removal by instruments devised by Killian, Brünig or Chevalier Jackson is merely mentioned. Since the perfection of the latter's instruments, it is only on rare occasions that an external operation need be resorted to.

In spite of the above criticisms, the book can be heartily recommended to students and practitioners.—R. B. S.

A MANUAL FOR STUDENTS OF MASSAGE. By Mary Anna Ellison, Member of the Incorporated Society of Trained Masseuses. Third Edition. Pp. xiv + 189, with 2 Folding Plates and 56 Illustrations. London: Baillière, Tindall and Cox, 1909. Cloth, 5s., net.

The third edition of Miss Ellison's little book contains a number of additions which greatly enhance its value. The book is a distinct improvement on many similar ones in that it gives a fairly thorough review of human anatomy and physiology, with excellent illustrations, eminently suitable for students beginning the study of massage. There is a fair presentation of the principles of massage, probably quite enough for all practical purposes. Indeed, it is the opinion of the reviewer that the ordinary works on this subject contain a vast lot of conjectures and detailed instructions as to how this or that should be done, which in the main are superfluous and even misleading. It is distinctly better in a text-book to furnish students with a good groundwork of structure and function, along with the fundamental principles of action, leaving technique and methods to be learned from expert demonstration. It is proverbially difficult to teach violin-playing or the art of painting from a book. These must be learned by patient toil and repeated effort under the personal instruction of a master in the art.

A valuable feature of the book is a table of the muscles, giving their origin, insertion, action and nerve-supply, which will be found of great use to students; also a large plate of the spinal nervous system, with its distributions, and one of the sympathetic nervous system. There is a good chapter upon the "Weir Mitchell treatment," so-called, in this country known as the "rest treatment," with its various accessories; a *résumé* of the subject of the ductless glands and their physiologic bearings upon clinical problems; an excellent presentation of certain special forms of treatment, such as the Nauheim or Schott treatment; and a chapter on locomotor ataxia with the regulated exercises for this as originally opened up by Fränkel. Altogether, we can heartily commend this little book as being succinct, clear and well balanced.—J. M. T.

THERAPEUTICS OF THE CIRCULATION. Eight Lectures Delivered in the Spring of 1905 in the Physiologic Laboratory of the University of London. By Lauder Brunton, Kt., M.D., D.Sc., LL.D. (Edin.), LL.D. (Aberd.), F.R.C.P., F.R.S., Consulting Physician to St. Bartholomew's Hospital. Pp. 280, with Illustrations. Philadelphia: P. Blakiston's Son & Co., 1908. Cloth, \$1.50.

The book under consideration represents a series of eight lectures delivered in the physiological laboratory of the University of London in the early part of 1905. An appendix has been added, therefore, more fully to bring the book up to date. From the nature of the book, it is merely intended to convey the essentials of the subject, and this is done in a most satisfactory manner. Of special interest are certain physiologic facts which are barely touched upon, if at all, in most of the standard works. Of these, the most important are: the aid to the return of venous blood exercised by the muscles, a veritable massage movement, the self-massage of the heart and the arteries, and the further action of the arteries upon veins when the arteries and veins are in a common sheath. The subject of blood-pressure is handled in a peculiarly interesting and suggestive manner, and an excellent exposition is given of the evolution of latter-day blood-pressure instruments. Not only is the physiology of the circulation ably dealt with, but a résumé of the most important pathologic conditions is reviewed with practical views on their treatment. The section dealing with the cardio-vascular remedies is one that can be especially recommended. Incidentally, Brunton does not accept the neurogenic or myogenic theory of cardiac contraction, but believes that both play a part, and instances the well-known experiment of Kronecker in support of this view. The book is a most readable one, and one that can be strongly recommended to advanced students, or to practitioners of several years' standing, who feel the need of more recent information on these topics.—W. E. R.

INTERNATIONAL CLINICS. A Quarterly of Illustrated Clinical Lectures and Especially Prepared Original Articles on Treatment, Medicine, Surgery, Neurology, Pædiatrics, Obstetrics, Gynæcology, Orthopædics, Pathology, Dermatology, Ophthalmology, Otology, Rhinology, Laryngology, Hygiene, and Other Topics of Interest to Students and Practitioners. By Leading Members of the Medical Profession Throughout the World. Edited by Henry W. Cattell, A.M., M.D., Philadelphia. Volumes II and IV, Nineteenth Series, 1909; Volume I, Twentieth Series, 1910. Philadelphia and London: J. B. Lippincott Co.

These excellent volumes have earned an enviable position in the medical world. They afford to those who read them carefully the benefits of a polyclinic, in which clinicians from all parts of the world submit the products of their experience. An aggregate of practical points is thus garnered in each volume which admirably supplements the text-books of practice, which are seldom up to date, even when published. Again, these volumes afford the reader an opportunity to obtain the opinion and learn the practical procedures of specialists, as it were, upon each question, since the contributors to the work write upon subjects with which they are especially familiar. This may well be illustrated by the following titles taken at random among the volumes reviewed: "The Serum Diagnosis of Syphilis," by Homer F. Swift; "Symptomatology of Pellagra," by J. J. Watson; "The Treatment of Pellagra," by James M. King; "Some Recent Additions to Our Knowledge of Purin Metabolism and Their Bearing on the Problems of Gout," by H. Gideon Wells; "Tuberculosis of the Thyroid Gland, with Report of a Case," by A. E. Halstead; "Tabes Dorsalis—Its Rational Treatment in the Light of Its Real Pathogenesis," by Tom A. Williams; "Investigation of the Portio Vaginalis of the Uterus in Relation to Conception," by June Kichi Kimura; "Diagnosis and Treatment of Pneumonia in Children," by Louis Fischer; "Diabetes," by Edward F. Wells; "Anorectal Fistula and Its Treatment," by Bernard Asman; "Perithelioma Testis," by F. G. Bushnell; "Adrenal Insufficiency," by Emile Sergeant; "Gouty Phlebitis," by Sir Dyce Duckworth; "Color Photographs in Relation to Surgery," by C. B. Longenecker; "The Röntgen Diagnosis of Pulmonary Tuberculosis," by C. L. Leonard; "The Indications for Surgery of the Prostate," by J. B. Deaver; "Notes on the Diagnosis and Treatment of Congenital Syphilis," by G. R. Pisek.

The first volume of the year contains an additional feature calculated to aid the practicing physician, to wit: a review of the progress of medicine (or rather "Treatment," "Medicine," and "Surgery") during the preceding year.—C. E. DE M. S.

VACCINE AND SERUM THERAPY. Including also a Study of Infections, Theories of Immunity, Opsonins, and the Opsonic Index. By Edwin Henry Schorer, B.S., M.D., Assistant Professor of Parasitology and Hygiene, University of Missouri, etc. Octavo of 131 Pages, Illustrated. St. Louis: C. V. Mosby Co., 1909. Cloth, \$2.00, net.

In the present work, the author attempts to give in a concise and readable form the present status of Vaccine and Serum Therapy. As far as his aim has gone he has succeeded, having worked out faithfully the prevailing conceptions of the important subjects. These are reviewed in a clear and concise manner, eminently fitted for the student and practitioner, for whom the book is evidently intended. We must take exception with the author, however, when he ascribes the disappointing results that have attended the clinical application of Wright's method to its unscientific use by physicians. Solidly grounded and clearly defined indications do not mislead physicians and involve "unscientific use." If Ehrlich's theory were not groundless insofar as the side-chain feature itself is concerned, if the whole scheme of investigation had a foundation other than this misleading theory, "opsonins and vaccine therapy" would not, as the author states, "have gone into disrepute as did tuberculin nearly twenty years ago," even among its "indiscriminate and unscientific" users. It is time that the laboratory man should realize that the general practitioner is the fighting man of our profession and that if he commits errors those who are to blame are the manufacturers of his weapons, and particularly the laboratory investigators.—C. E. DE M. S.

GRAPHIC METHODS IN HEART DISEASE. By John Hay, M.D., M.R.C.P., Assistant Physician. Liverpool Royal Infirmary. With an introduction by James Mackenzie, M.D., M.R.C.P. Pp. 184, with 128 Illustrations. New York: Oxford University Press, 1909. Cloth, \$3.00.

Since the appearance of Mackenzie's book on the pulse a few years ago, in which he so modestly referred to his work, which was in reality epoch-making, much effort has been spent in the study of cardio-vascular diseases by polygraphic methods, and numerous treatises and many volumes have been devoted to it. One of the best introductory works of this character, is this little volume of Hay's of less than two hundred pages. The subject is a difficult one. Even after the technique of making multiple tracings, i.e., simultaneous tracings of apex beat, carotid and jugular pulsations or radial and jugular or liver pulsations has been acquired, their interpretation often presents problems of considerable intricacy. No attempt has been made to describe the more usual physical diagnostic measures, inspection, palpation, percussion, or auscultation, nor is blood-pressure specially considered; but for one who desires a clear but brief exposition of the newer methods of studying cardio-vascular diseases, this little work can be highly recommended. The author, I think with the majority of physiologists of to-day, inclines to the myogenic theory of cardiac contraction. His anatomic considerations are of very considerable practical interest.

No systematic study of valvular diseases is presented; in fact, the important element in all cardiac diseases is the muscles, so that the tendency to-day in this graphic method is toward a clearer elucidation of the exact mode of abnormal muscle action, and to this end this work of Hay's is directed. The necessary instruments are described and the normal records are explained, together with the terms employed. These chapters are devoted to "The Auricular Type of Venous Pulse," "The Extra Systole," "The Ventricular or Nodal Form of Venous Pulse," etc., with a chapter on "Difficulties in Interpretation of Sphygmograms." The book is very well illustrated, and will prove a valuable aid to those who desire either a working knowledge of the subject or who wish to familiarize themselves with the teaching of to-day on the subject of the heart diseased.—W. E. R.

THE CARE OF THE CHILD. By Mrs. Burton Chance. Philadelphia: The Penn Publishing Company, 1909.

We have here an excellent and reliable book, written by a woman of intelligence and experience, herself a mother and a good one. She has accomplished well that which is set forth in the brief preface (written by Dr. L. Emmett Holt), that is, to impart a knowledge of the conditions of children's health and how they may be maintained by intelligent care and judicious measures. There are many books which aim to do all this, but it is with pleasure that we can assure our readers that herein it is as thoroughly and well done as it is reasonably possible to do it.—J. M. T.

[End of Editorial Department]

The General Field

The Self-Sufficient Nurse.

"The doctor said, give the baby one spoonful of cream each feed, but the nurse said he would starve on that so she put in three spoonfuls." This is the keynote of a recent conversation overheard in a New England State. The relations of the family and the faithful family physician are usually entirely harmonious until the trained nurse enters on the scene. After that the chances are at least even that the family faith in the family physician will have been very materially weakened in two weeks' time.

There are, of course, many nurses who feel that they must conscientiously carry out the doctor's instructions without criticism, but unfortunately the proportion of that type of nurse seems to be constantly lessening.

So bitter has become the antagonism between some of the professional nurses and leading physicians of Philadelphia, that the newspapers have recently been devoting whole columns to the subject. Among the most aggressive critics of the professional nurse is Dr. Henry Beates, Jr., President of the State Board of Examiners of Pennsylvania, who unqualifiedly denounces the nurse who assumes responsibility of modifying the physician's instructions and frequently changing dosage, which he says is a common occurrence in the experience of the Philadelphia doctor. Other prominent physicians, including Dr. J. Madison Taylor, express similar views.

The combination of a little knowledge with a low average of general intellectual development usually produces a frame of mind which has made a certain type of

trained nurse so peculiarly offensive to physicians. The doctor spends many years in acquiring a technical understanding of his profession. The nurse gathers a few rudimentary ideas of anatomy and physiology and promptly arrogates to herself a greater knowledge of treatment than the best educated physician. Add to this unfortunate state of mind the doctor's natural resentment and we have the conditions which are leading the best physicians to seriously contemplate the employment of unprofessional nurses as being, all considered, preferable to the graduate nurse.

This is certainly a regrettable state of affairs, and it is to be hoped that the training schools for nurses will wake up to the situation and try and instill in the minds of their graduates the old primitive idea that obedience to instructions is after all the most valuable qualification of the employe.

The Nutritive Value of Hippopotamus Meat.

The ability of Ex-President Roosevelt to create interest in new topics has been the subject of comment for some years. Since his recent visit to Africa a great deal more is known about the hippopotamus than ever before.

People with a knowledge of this quadruped derived exclusively from circus posters, often a somewhat misleading source of information, are now able to converse fluently on the hippopotamus whether in the drawing room or corner grocery store and they have made a great discovery.

It is now authoritatively announced that within a comparatively few years

the hippopotamus will be luxuriating in the marshes of the Gulf States multiplying with great rapidity,—and incidentally will solve the meat question for the inhabitants of this enlightened country.

People who have eaten hippopotamus steak, sent at great expense from the wilds of Africa to Coney Island, say that it is one of the greatest delicacies that has ever come their way.

It has all the firmness of a good resolute beef steak combined with the delicacy of flavor of the succulent pork chop.

Evidently the days of the beef trust are numbered.

Doctor, Buy Land.

The last two years have opened the eyes of well-informed people as to the rapid gain of the consuming capacity of the people of the United States as compared with the production of foodstuffs.

The constant growth of the cities and manufacturing centers, with the shrinkage in agricultural products on the prairies, and other sections where dependence has been made on the natural fertility of the soil, points very definitely to a time when the exports of agricultural products will practically cease.

A great area of timber lands has been exploited by the lumber interests and left in a barren condition. To be sure, a new growth of timber can be expected on these lands in the course of time, but it takes a good many years to accomplish this result. At present these lands have a very small valuation in the real estate market. It is the custom in many sections for lumbermen to buy farms for the timber lots and after taking off the timber to either dispose of the farms at a nominal price or carry them along with a view of perhaps securing another cutting of timber at some remote period.

If the present price of agricultural

products is maintained, and it seems almost inevitable that it will be, it is quite possible that the tendency to leave the rural districts for a city existence will be somewhat checked.

The purchase of small farms by mechanics and other residents of manufacturing centers is one of the significant symptoms of a change of sentiment in the past two years. The purchase of an abandoned farm with a nominal assessed valuation is one of the investments which promises not only practical assurance of safety, but also gives indication of eventual handsome profits.

The Family Roof Garden.

In view of the fact that the roof garden idea for amusement purposes was an instantaneous success, and that the advantages of pure air are more and more appreciated by all intelligent residents of cities, it is somewhat surprising that no more use has been made of the roofs of dwelling houses by the average urban householder.

Those who remain in cities during the heated term are naturally inclined to seek for such comfort as may be found from the porch or doorstep,—usually the latter,—but the air at street level is a very different element from that on the top of the three-story dwelling. Moreover, the associations of the front doorstep often leave somewhat to be desired.

It would cost but a trifling sum to utilize the roofs of the average city residence so that the family could resort to a very comfortable and even delightful place of refuge as the shades of evening approach. Equipped with awnings, considerable use could be made of the roof during the daytime, while by a slight additional trouble and expense for hammocks, the roof could be feasibly utilized for sleeping purposes.

The fresh air cure for tuberculosis has educated a great number of people to believe in the fresh air treatment for other ailments, the result of which is likely to be seen in a much lessened death rate as years go by. The idea of utilizing roofs of dwelling houses as a means of securing a purer strata of atmosphere does not, however, seem to have made any lodgment as yet in the mind of the average city resident.

Soothing Syrups Again.

The authorities at Washington announce that there has been a new inundation of nauseous compounds for the soothing of restless infants and the relieving of headaches.

Some of these soothing syrups have been found to contain cocaine, morphine and other dangerous compounds in such proportions as to make the use of them almost sure death.

It is unfortunate that the laws against this form of misdemeanor are so entirely inadequate.

An unscrupulous person can concoct a soothing syrup; put it on the market and if prosecuted gets off with a light fine.

There should be a fund established for the purpose of prosecuting such offenders unremittingly whenever the occasion arises. Plenty of people could be induced to subscribe to the fund if the subject could be brought before them.

As long as a considerable number of people accept as law and gospel what they read on a patent medicine circular, the temptation will exist for unscrupulous persons to profit by such ignorance.

Dr. Hewitt's Victory.

The eight years' litigation of Peter Cooper Hewitt, the inventor of the electrical transformer, is reported to have

terminated with a victory for Dr. Hewitt.

This invention is of far-reaching commercial importance as it provides a means by which alternating currents can be cheaply converted into direct currents and thus made available for ordinary commercial purposes as lighting and mechanical power.

A recent magazine writer has discussed the reasons why the descendants of a great man are seldom conspicuous in the world's eye. He admits, however, that there are exceptions. Peter Cooper Hewitt is evidently one of the exceptions, being a grandson of Peter Cooper, and a son of Abram S. Hewitt, both names representative of all that is high and notable in New York genealogy. The electrical transformer by Dr. Hewitt is likely to revolutionize the application of electrical energy and incidentally to modify the commercial history of the world. All this promises, among other things, storage battery propulsion for street cars and a simplification of the electric motor cars which may in this way eventually supersede the gasoline cars.

Professional Discussions With Patients.

A physician in a small manufacturing city was criticised to a considerable extent by his colleagues because of his habit to take his patients thoroughly into his confidence, discussing with them the various symptoms and conditions, explaining the nature of his prescriptions and what he hoped to accomplish by them, and in a general way making the patient a partner in the plan for restoration of health.

This custom was very much at variance with that of other physicians in the neighborhood, who acted on the principle

that the patient could not possibly be able to comprehend the nature of his condition, in a technical sense at least, and that it was a lowering of professional dignity to enter into such discussions.

There are, of course, two sides to every argument, but the remarkable professional success of the individual physician in question, the confidence which his patients reposed in him and the ability which he demonstrated in teaching the laws of hygienic living to his patients, apparently justified his theory.

So much depends upon a proper understanding of the laws of health that it would seem to be only fair that the physician should explain to his patients not alone the causes which may have produced certain unfavorable symptoms, but the methods employed to relieve these symptoms and the means by which the patient can avoid future attacks.

The Physical and Moral Benefits of Music.

While the average uneducated person has little conception for the more advanced grades of music, there are few who are not susceptible to the influence of simple melodies.

The recent visit of Geraldine Farrar, of grand opera fame, to the U. S. penitentiary at Atlanta was graphically described in the daily papers. For forty minutes she sang simple ballads to the convicts, more than one thousand being in attendance. At the conclusion of the concert, most of the convicts and the singer herself were in tears.

The moral influence of such an experience on the convicts, considered collectively, must have been very beneficial, and this suggests the question whether music as a form of moral therapeutics could not be profitably employed in the penal institutions.

A considerable proportion of the residents of Philadelphia are fortunately able to spend a part at least of the heated term at shore and mountain resorts. There remains, however, in this city, as in others, a relatively large number who are not so fortunate. For their benefit the city makes an ample appropriation for free concerts, which are given in different sections in the park as well as in open squares in various parts of the city. The response to these opportunities by music-lovers is exceedingly gratifying. Thousands of people of all conditions and walks in life listen with the greatest appreciation to the musical selections, which are for the most part of a comparatively high grade. There is very little ragtime and cheap music played. It is not uncommon to see ten thousand people gathered around a bandstand in Fairmount Park.

In the strenuous struggle for daily bread and other necessities of this complex age, it is small wonder that the physical and mental strain becomes in many instances almost insupportable. Nothing is more calming to the tense nerves of those who are overworked than an opportunity to listen to good music. In the treatment of nervous diseases music has long been recognized as a factor of importance. It is likely that, as people become better acquainted with cause and effect, physiologically considered, music will play a part of considerable importance in the prophylactic and restorative program.

Profitable Occupation for The Retired Business Man.

For quite a series of years it has been the custom of the Western man to take trips "down east," which meant all the way from Chesapeake Bay to the Bay of Fundy, and after taking a general view

of this stretch of country, return with great satisfaction to his retail store or prairie farm with commiseration in his soul for the unprogressive agricultural methods of the Eastern farmer.

There has been plenty of justification for the disparaging comments made by the breezy Westerner on Eastern agriculture, but nothing remains stationary very long in our turbulent business atmosphere. The taking up of abandoned farms by people of wealth has become a widely noted vocation. A study of the soils of the Eastern States has convinced a steadily increasing number of people that great possibilities await the scientific farmer in the East, not only as a pastime but as a source of profit.

The most startling change in business sentiment, however, has bearing upon the development of agriculture in the Southern Atlantic States. Especially in Florida has this awakening been noted. The removal of the original pine forest was followed by the usual period of desolation. It has now been discovered, however, that only the application of modern agricultural methods is necessary to make these desolate wastes produce bounteously of a class of agricultural merchandise which brings fabulous prices when delivered to the market early enough in the season. This the climate of Florida makes entirely feasible.

A section offering great inducements to settlers is that in the vicinity of Tampa Bay. The influx to this section of visitors intent upon investment is said to be a source of great amazement to the casual tourist. He finds himself crowded out of the best rooms in the hotels and if he chances to think of investing in land, he finds that other more strenuous types of investors quite likely may have preceded him.

It is certainly a healthful indication

when the "land hunger" takes possession of the city dweller. The British public are said to have recently speculated madly in rubber. The investor in farm property along the Atlantic seaboard most anywhere from Key West to Eastport, Maine, cannot be accused of reckless speculation.

The picture of the retired business man giving himself over to paltry details and memories of past usefulness is sufficiently familiar.

In pleasant contrast is the cheerful activity associated with the development of a summer farm residence in New England or a winter farm residence in Florida, with healthful out-of-door life and the gratification of the normal business instinct. The Western farmer will eventually come East for instruction in real agriculture.

A Common Kindness Experienced by the Doctor.

A patient's eagerness to impart a valuable clinical secret to the family physician is one of the amusing experiences of the doctor's life. The lady feels in duty bound to give the doctor the benefit of her great discovery. The appreciation shown by the doctor is always very gratifying, but it is strange how infrequently the doctor seems to find a case within the range of her acquaintance where he can apply that most excellent remedy. Realizing as she does, how courteously and graciously the doctor received her suggestion she naturally explains his failure to use this immortal discovery to an exceedingly poor memory.

Probably the doctor has no more valuable possession, no matter how great his worldly success, than that same "poor memory" which enables him to forget so much every twenty-four hours of his existence.

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Address

THE PROGRESS OF THERAPEUTICS.*

By J. C. WILSON, M.D.,

Professor of Practice of Medicine and Clinical Medicine in Jefferson Medical College,
PHILADELPHIA.

THE advance of the art of healing has been compared to that of a drunken man, who steps with an uncertain gait, now turning this way and that, now reeling or stopping altogether, and after many slow and tortuous steps too often failing wholly to arrive at his destination. The student of the history of medicine finds this simile false in almost every particular. The progress of our art is rather to be compared to the course of a river in a new channel through a broken and hilly land. It has met with many obstacles both great and small, but all difficult to overcome—now an inviting course, which has proved to be no thoroughfare; now an alluring byway which has led to nothing; again, rocky barriers and insurmountable heights which have turned it aside to await, in drowsy hollows and unproductive marshes, the flooding of new waters and the massing of new energies to help it to attain its end and to flow, a powerful and beneficent stream, toward the great accumulated sea of human knowledge. To relate the story of this progress from the myths which surround the head of *Æsculapius* to the cold facts of the laboratory of our day to an audience such as I have the honor of addressing would be to rehearse a twice-told tale; nor would time permit, nor the slender learning possible in the strenuous life of the physician of our day. To do it worthily would be the telling of the strangest and most moving romance of history, in which superstition and credulity, craft and avarice, ignorance and vice have waged through the centuries a losing warfare against the finest and most noble attributes of mankind, the observation of nature, scientific truthfulness, unwearying devotion to human welfare, the

* President's address at the Eleventh Annual Meeting of the American Therapeutic Society, held in Washington, D. C., May 5, 6 and 7, 1910.

purest altruism and the highest exercise of reason in the struggle for the maintenance of health, the mitigation of suffering and sorrow, and the prolongation of life.

In this history are many leaders of men whose lives, devoted to the work of their day, have moulded and impressed the thought of the remotest periods even to our time. Foremost stands Hippocrates, well called the father of medicine, in whose writings are reflected the literary grace and philosophical spirit of the most enlightened age of Greece. Hear the first of the aphorisms. We never tire of it. "Life is short, art is long, occasion sudden, to make experiments dangerous, judgment difficult. Neither is it sufficient that the physician do his office, unless the patient and his attendants do their duty and that externals are well ordered." This in the island of Cos, in the Ægean Sea, 400 years B.C., by one who has the great distinction of having been the first to put aside the traditions of ignorance and superstition and to found the practice of medicine upon the phenomena of nature. Next in the course of time conspicuous is Claudius Galenus of Pergamus, whose skill as an anatomist and voluminous writings upon medicine made him the master authority upon medical knowledge for centuries.

From the time of Galen history was long silent upon the subject of medicine. The teachings of the Hippocratic school were kept alive chiefly by the Saracens, who, however, added little to the knowledge previously acquired. To this period belong Oribasios and Avicenna. The so-called Arabic period extended to the time when, under the influence of the Crusades, the Renaissance began. Europe, at first gradually, then with a start, aroused from the lethargy of a thousand years. Schools of learning and universities sprang up in Salernum, Naples, Montpellier, Paris, Oxford, Bologna. Within two centuries almost every important city of Europe had its university. The faculties of theology, arts, law, and medicine were gradually differentiated. But medicine was prominent in every school. In some, as Salernum, medicine was long the sole department, a suggestive commentary upon modern university organization, in which are found sometimes all the faculties represented except that of medicine; or, again, a medical department dragging on an unsatisfactory existence by reason of inadequate equipment and a discouraged and not altogether harmonious faculty.

A period of great activity in medicine followed. Students flocked from one university to another to listen to the teachings of the popular professors. This was the time of the great early anatomists, Lisfranc, Mondino, Linacre, Sylvius, Vesalius, and the famous succession which culminated toward the close of the sixteenth century in Harvey, who by the discovery of the circulation and the demonstration of the correlation between function and structure signalized the dawn of scientific medicine.

Skillful as the anatomists of this period were they failed to recognize the underlying principle of their art, and it remained for the indefatigable Bichat, a genius of the first order, two centuries later to demonstrate the identity of membranes and tissues in the different organs and to develop the science of general anatomy, just as it had been left to the early microscopists to recognize

the cell as the morphological unit of the tissues and create histology, and to Virchow, who was born two decades after Bichat died, to found the science of cellular pathology.

Meanwhile the teachings of Harvey were bearing fruit in various directions. Morgagni showed anatomy to be the basis of all other medical studies and became the founder of pathological anatomy. Boerhaave, the great Hollander, and the English Sydenham were developing medicine from the clinical side and expounding the doctrine of what we now know as the natural history of disease. Haller, who was not only anatomist but likewise poet and statesman, was teaching physiology in Göttingen, and William and John Hunter in London were carrying on researches in the true spirit of science in problems relating to anatomy and physiology, and making practical application of their results in midwifery and operative surgery.

Early in the eighteenth century the time was ripe for a new departure in medicine—the study of causes. The accumulated knowledge of structure and the growing knowledge of function had brought to light in pathological anatomy many of the lesions underlying the derangements of physiological processes which, taken together, constitute the manifestations of disease. The new problems were subtle and difficult. In their solution, and there only, was the progress of medicine possible. Demoniacal possession, an offended deity, spells and witchcraft, causes that had been invoked to account for sickness in the individual and pestilence in the multitude, could no longer, in the growing light of science and the clearer perception of the phenomena of nature, be regarded as adequate or even acceptable. Working hypotheses were not wanting, but the ancient superstitions and vain guesses based upon imperfect observation lay like an incubus upon a pathology struggling into existence, prolonging a blundering empiricism, and postponing the very conception of such a thing as rational therapeutics. To the theory of humoral pathology we owe scarcely anything but meaningless terms which cumber and distort nosology, and measures of treatment mostly abhorrent to nature. William Cullen regarded the nervous system as the primary seat of diseases which were due either to spasm or atony, while his pupil and assistant, John Brown, likewise of the University of Edinburgh, placed all diseases in two great categories, the sthenic, resulting from over-excitation, and the asthenic, arising in consequence of underexcitation. Hahnemann promulgated the theory that knowledge of disease is limited to its signs and symptoms, that it is impossible to know anything of pathological conditions hidden from the eye, and that the removal of morbid manifestations means that the disease which caused them has also been removed. Broussais, of Paris, propounded the so-called physiological system of medicine, which rests upon the hypothesis that, since irritation or excitation is the fundamental attribute of all living animal tissues, diseases are produced by an undue increase in that attribute—a variant of the doctrine of Brown.

These researches in the direction of etiology, having their origin in mere speculation, led to no direct practical results, but they indirectly stimulated renewed investigation in pathological anatomy and clinical medicine. The close of the eighteenth and the first half of the nineteenth century was a

period of remarkable activity. Diseases were divided into general and local or constitutional and visceral, a classification which in some instances has been carried out more rigidly for purposes of description and teaching than the facts of nature warrant. The fevers were classed as eruptive, malarial, and continued, and under the teachings of Louis and his pupils the last group was subdivided into typhus, typhoid, and simple. Relapsing and yellow fever, influenza and dengue were recognized as distinct nosological entities and were found in their transmission from the sick to the well to retain their specific characters—a fact that tended greatly to advance the idea of infection and to clear the way, as did the great discovery of Jenner a few years before, for a scientific knowledge of causes. The forms of pulmonary disease were discriminated; pleurisy and pneumonia were separated; diseases of the heart were carefully studied, and Richard Bright, in 1827, called attention to the characteristics of the forms of kidney disease long described under his name, and set our knowledge of them upon a sure basis. Percussion, the *inventum novum* of Auenbrugger, discovered in 1761, forgotten, but revived and amplified by Corvisart, constituted the beginning of physical diagnosis, while auscultation and the invention of the stethoscope by Laennec, and the impetus which they gave to the bedside study of diseases of the lungs, heart, and abdominal viscera, marked an epoch of incalculable importance in the history of clinical medicine.

With the development of pathological anatomy on the one hand and of clinical methods on the other came that division of labor to which we owe the specialties—a concentration of energy which may be compared to intensive farming and which has done more to secure accuracy in scientific observation in clinical work and precision in therapeutic measures than any other event in the history of medicine.

Among the specialties, alienism and neurology were of supreme importance in paving the way for a scientific recognition of the causes of disease, and have had a profound influence upon modern therapeutic thought. But it was to the microscope, which from the time of Galileo, who has been called the greatest of early opticians, till the end of the eighteenth century was scarcely more than a scientific toy, that the study of causes owes its crowning successes. The animalculæ of Leeuwenhoek as supposed causes of disease and the theory of spontaneous generation to which they gave rise so stimulated the development of the instrument itself, microscopic technique, and the spirit of investigation that two centuries later, with the relegation of the former to their proper place in nature and the triumph of the dictum of Harvey, *omne vivum ex ovo*, bacteriology, the youngest of the natural sciences, daughter of the genius of Pasteur and Koch, came into being.

Thus at the beginning of the last third of the nineteenth century the study of causes found a sure foundation in the facts of science, and empiricism in therapeutics gave way to rationalism. Half a century has not yet elapsed and the art of healing shows signs of being revolutionized. The modern theories of infection and immunity are established upon unassailable facts. The part played by bacteria in nature and the arts is of an importance and extent wholly unsuspected until within the last two or three decades. The part which they

play in the causation and cure of disease remains among the mysteries of nature, of which as yet our knowledge is only at the threshold. Many of those which are pathogenic are known to us by specific morphological, tinctorial, and cultural characters, but the existence of others which have eluded the known methods of research may be inferred, as in the case of measles for example, by the constancy of certain associated morbid phenomena, just, to take an illustration from enormous magnitudes, as astronomers have inferred the existence of an undiscovered celestial body from disturbances in the orbit of those which are known.

The blood-serum, not long ago regarded as a simple solution of albumin and certain salts, is now known to possess properties in health and disease of the most subtle and occult characters and potentialities in regard to infection, immunity and therapeusis equally mysterious. The history of the advance of medicine would be but a series of disconnected episodes were it not that it teaches us that here, as in other fields of human endeavor, knowledge ripens slowly and that failures are the stepping stones to success. It teaches us another lesson worth the knowing, namely, that the control of effects can be compassed only through a knowledge of their causes. More than two thousand years of empiricism before reason came to her own in medicine! There were charms and incantations and pilgrimages and votive offerings and laying on of hands, yes, and prayers; but no calamity of plague or pestilence was averted and no man who was really sick was made well. Drugs there were of all kinds, and many of them potent, drastic or sleep-compelling as the case might require, but

"Not poppies nor mandragora
Nor all the drowsy syrups of the East"

could touch the ills of mankind at their source. Jenner alone in all time before the era of bacteriology—our era—applied the knowledge of causes to preventive medicine and wrought the wonder of a rescued world. To-day we watch the effects of the antitoxin made possible by the work of Klebs and Loeffler, or those which follow the administration of Flexner's serum, and experience the sensation of having witnessed a miracle. But there are no miracles.

There is yet another lesson in this history of our healing art, namely, the indirection by which it has advanced. There is no reason for medicine except to prevent and cure disease. But most of the actual workers who have made this history appear to have been concerned with something else. It is true that the school of Hippocrates, at Cos, was a great medical center, and the recent work of the archæologists shows that there were splendid buildings, temples perhaps, or it may be hospital pavilions for the care of patients. We do not know. But thither came students in great numbers to study medicine, not to practise it. Galen was physician to the school of gladiators in Pergamus and afterward attended Marcus Aurelius at Venice and in Rome, but he found time not only to write a great many treatises upon medicine, but many more upon philosophical subjects, and is said to have placed greater faith in amulets than in drugs. The Arabian physicians are generally described as philosophers as well as physicians, and wrote voluminously on logic, meta-

physics, astronomy, and geometry. It does not appear that they were great practitioners. In the dark ages of European history such healing as was practised was in the hands of the clergy, who united the functions of the physician with those of the priest. With the Renaissance medicine became again a learned profession, but we find its great men more concerned with anatomy than with sick men yet alive. That arch-charlatan, Paracelsus, who was a contemporary of Harvey, took much interest in actually getting people well, and thereby acquired a high reputation. The translation of Cullen's "*Materia Medica*" led Hahnemann to write the "*Organon of the Art of Healing*," and to propagate a system of therapeutics based upon "similars," "dynamization," and infinitesimal doses, irrational in itself but leading to a welcome reaction against the nauseous and disgusting polypharmacy of the times, and from this period there has been less of indirection and a progressively increasing tendency toward practical results.

This tendency was the influence the recognition of which ten years ago brought the American Therapeutic Society into being, and it is this tendency which constitutes the motive and stimulus for its well-organized and effective work. Young among the national societies, this was the first and is the only American national society which has for its sole object the utilization of the late results of time in the prevention and cure of disease. The specialism which has been of so great a service in the art of medicine has rendered a similar but even greater service in the organized medical profession. It has given to the American Medical Association its Sections, to the Congress of American Physicians and Surgeons its constituent Societies, it has distributed a great work among many efficient organizations; but it has left to our Society the supreme task of the application of results to the great purpose of every worker—prevention and cure.

And this leads me to remind you that specialism and organization are complementary: that without the one the other cannot exist and that the new medicine is the product of this union. In the medical sciences individualism has passed away. There will always be leaders, but never again a Hippocrates, nor ever a Galen or Harvey. The greatness of the man of our day is merged in the greatness of his coworkers. Authority and precedent, which are the power of the law, have become as idle words in medicine, which concerns itself with facts and facts alone, having become altogether disdainful of opinions as such.

A comprehensive survey of the work done by the members of this society individually and collectively discovers here also a well-defined tendency to specialism. Three main therapeutic trends have been differentiated. First, the Hippocratic medicine in which the forces of nature other than drugs play the most important rôle. Of predominating influence in the days of classical antiquity, the curative powers of diet, exercise, baths, mineral waters, and climate fell into a long neglect, to be revived in modern medicine with great advantage to the practice of the therapeutic art. One of our members has edited a series of extremely valuable books upon these subjects. Second, the general subject of psychotherapy and re-education in the management of some

of the functional neuroses. This form of treatment, though of later origin, is by no means a modern invention, as many assume it to be. Seneca, who lived at the beginning of the Christian era, is referred to now by writers upon the subject and the curious and ceaseless doubts and fears of psychasthenics of a certain type have been familiar to the clergy from the earliest times. Much wise advice concerning the management of such persons may be found in early ecclesiastical and philosophical literature. It is, however, only in recent years that this method of treatment has been developed and systematized under the leadership of men like Freud and Breuer in Germany, and Taylor and others in our own country. The symposium upon psychotherapy at our meeting in New Haven last year, in which my distinguished predecessor took part, constitutes one of the most important recent contributions to the subject. The third and main trend includes the general study of therapeutics as comprising the empiric use of drugs on the one hand and the rational employment of causal remedies upon the other.

The life-work of the first president of this society has been devoted to experimental therapeutics and the study of the physiological action of drugs, in particular the alkaloids, and throughout its existence the communications to this honorable body have embodied the results of accurate and scientific clinical studies in this field of investigation. Our work consists in the application of the means to the end, and the time is now at hand for us to enter upon the latest phase of applied therapeutics from this point of view, namely, rational therapeutics based upon the latest results of the scientific study of the causes of disease—serum therapy, opotherapy, and the use of bacterins. At our last meeting one of our members whose studies in opotherapy have attracted worldwide attention read a most important communication upon that subject, and our programme for this meeting contains a number of papers upon bacterins.

At an early stage in the progress of therapeutics as an art, it became necessary to publish collections of approved medical formulæ, together with the processes necessary for making the compounds therein described. Such a collection is known as a codex or pharmacopœia. These publications soon received the sanction of national authority in the principal countries. They acquired, in the course of time, an authoritative character and were subjected to revision at stated intervals. The first pharmacopœia, that of Nuremberg, appeared about the middle of the sixteenth century; that of the College of Physicians of London in 1618. Of the latter, eleven editions were issued, the last in 1851. Similar publications were issued under the authority of the organized profession in Dublin and Edinburgh. Since 1858 the British Pharmacopœia, an official publication of the Medical Council, has been the recognized authority in Great Britain. The Prussian Pharmacopœia and the French Codex are generally used in European countries. The first publication of this character in our own country was issued in Philadelphia in 1778, and a number of others subsequently appeared under the auspices of various medical institutions. As the outcome of the transactions of a convention held at Washington in 1820, "The Pharmacopœia of the United States of America" was

published. This publication has been regularly revised at a convention of delegates from various authorized bodies, including the medical departments of the United States army and navy. A convention will be held in this city in a few days for the purpose of the ninth decennial revision of this work. In view of this fact it has appeared appropriate that a symposium upon matters concerning the revision of the Pharmacopœia should form part of the work of the American Therapeutic Society at this meeting.* Those who are to take part are men especially interested in the matter, most of them delegates to the approaching convention, and all qualified to speak with authority upon the subjects to be discussed, especially from the standpoint of the practitioner of medicine. It is the confident hope of the members of this society that this discussion will exert an important influence upon the transactions of the convention.

In addition to the work of the members, there will be a number of communications from gentlemen who have accepted the invitation to address us upon therapeutic subjects which have especially engaged their attention and to take part in our discussions. I have the honor to thank those gentlemen all and severally, in the name of the Society, and to extend to them our most cordial greeting.

Original Articles

THE TREATMENT OF PNEUMONIA.*

By ALEXANDER MCPHEDRAN, M.D.,

Professor of Medicine, University of Toronto,
TORONTO, ONT.

PNEUMONIA is a local specific inflammation due to a local infection which results from the general infection, the lung being infected through the bloodstream. It is also peculiar in that before the infection, either general or local, betrays its existence the organism has gained a firm foothold in the lung, often affecting a large area of it. This fact has an important bearing on the treatment, especially in reference to the arrest of the disease.

For the last thirty years or more death in pneumonia has been generally regarded as due to cardiac failure in the great majority of instances. The cardiac failure is usually caused by depression of the vasomotor center in the medulla by the toxic albuminoid excreted by the pneumococcus. The failure of the circulation is possibly as much vascular as cardiac. The cases of cardiac failure may be divided into two groups viz.: (1) *The asphyxial*, in which there are cyanosis and other signs indicating failure of the right heart. The great majority of cases belong to this group. (2) *The syncopal*, in which

* Read at the Eleventh Annual Meeting of the American Therapeutic Society, Washington, D. C., May 5, 6 and 7, 1910.

there are the signs of anæmia of all parts, probably caused by splanchnic paresis and consequent dilatation of the abdominal vessels. In these cases the heart, in common with other organs, suffers from anæmia rather than from distention, yet the right ventricle is found at the autopsy to be filled with blood. In both groups the chief aim of treatment should be to raise the blood-pressure by vascular stimulation, in order to restore the circulation and so secure improved nutrition and excretion. The blood-pressure, therefore, becomes the best index as to the treatment which should be carried out. We know of no specific remedy for pneumonia. Although our knowledge of the cause of the disease has greatly increased, little if any advance has been made in its treatment. The mortality from it still remains excessively high, probably even increasing where the population is congested. Is the explanation for this the fact that the air in houses is kept at a much higher temperature than in former times and that the mode of living is growing less and less invigorating?

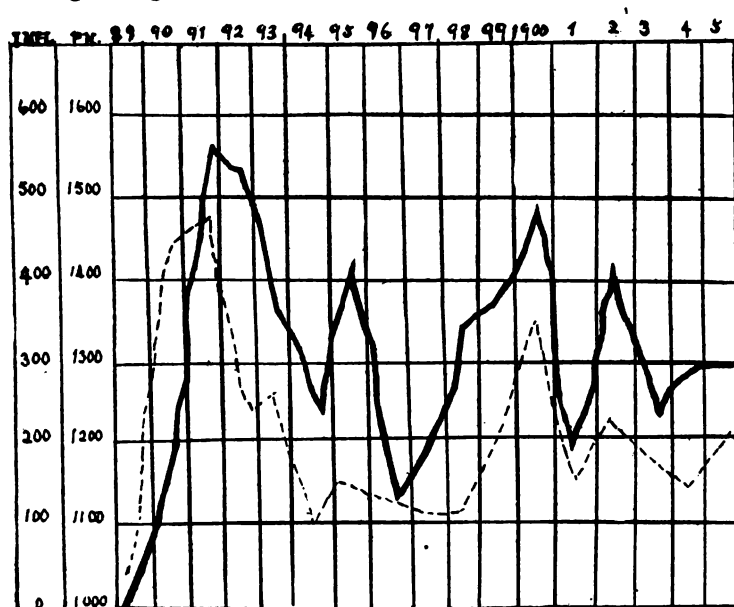


Table showing mortality curve of Pneumonia and Influenza for the years 1889-1905, constructed from the Registrar-General's returns.
Influenza. —————Pneumonia.

Prophylaxis.—Virulent pneumococci are so frequently present in the mouth that it follows that there must, in health, be strong resisting power in the body fluids. Two diseases are very frequently associated with pneumonia—measles in children and influenza in adults. West's table shows a remarkably close relationship between influenza and pneumonia from 1889, the year of the first epidemic of influenza, down to 1905.¹ Therefore, no one convalescent from influenza should run the risk of chill or over-fatigue

¹ The Practitioner, London, Vol. I, 1908; 430.

until recovery is complete. During the stage following the fever in influenza there is usually subnormal temperature and therefore general depression and lessened resisting power. This subnormal temperature furnishes a valuable index as to the care which should be taken to forestall the occurrence of pneumonia or other infection, to any of which the lessened resisting power increases the liability.

Curative Treatment.—Although we have no specific remedy for pneumonia, nevertheless it is hopeful that persevering efforts are being made to discover one. Naturally the trend of investigation is aimed at the discovery of a serum or a vaccine which will arrest the disease or at least moderate and shorten its course. Thus far not much definite progress has been made. There are various reasons for failure. Antipneumococcic serum is not antitoxic, but antibacterial, and would therefore require to be given at a very early stage of the disease, before the bacteria became firmly lodged, that is, before definite symptoms are excited; but that is before it is possible to make a diagnosis. Then, there are several varieties of pneumococci, and the serum of any variety may be powerless against the invasion of one or more other varieties. The employment of "killed" cocci or vaccines offers an alternative therapy. Eyre, in his interesting article² on this aspect of the treatment, says that a considerable measure of success has been attained by this means of treatment. How far it will bear out this estimate of its value remains to be proved by the test of clinical experience. Latham has found pneumococcic vaccine given by the mouth to have a marked influence on the progress in two cases, and refers to reports of encouraging results from Boellke's vaccine in severe cases of pneumonia and pneumococcic endocarditis. It is not probable, however, that vaccines can have a favorable influence in acute cases, because such patients are already suffering from excessive toxin stimulation. In some the intoxication is so severe as to so depress the hæmopoietic tissues as to paralyze their powers of producing leucocytes, and a fatal termination is the invariable result, while in others, although an excess of leucocytes is discharged into the blood, the patient is so depressed by the toxæmia that his powers soon fail and death is almost as inevitable. To inoculate either of these classes of cases would be to add to their already excessive toxæmia and hasten the fatal ending. In the cases which are able to react successfully against the invasion of the bacteria a vaccine is not only not required, but might so add to the general toxæmia as to exhaust the vitality of the patient. In delayed resolution of the consolidated lung and in circumscribed infections of other parts vaccines may prove of much benefit, as in such cases there is but little general infection; probably not sufficient to excite vigorous reaction in the leucocyte-producing tissues. Vaccines, therefore, appear to have a very limited field in the treatment of pneumonia.

The symptomatic treatment or, better, the *treatment of the patient* as indicated by the symptoms.—In ordinary attacks of pneumonia in children and younger adults no active measures are necessary. Rest in bed, sufficient

² Allbutt & Rolleston's "System of Medicine," Vol. V, page 241.

clothing to keep the patient comfortably warm, fresh cool air, light diet in moderation, and cleanliness of mouth and body are sufficient. Early and satisfactory recovery results in all cases unless some untoward circumstance occurs. It is only as there is suffering from distressing or dangerous symptoms that there is need for a resort to special measures for relief and for guarding as far as possible against danger to the vital forces. One of the most efficient means at our disposal to sustain vitality and aid the patient in resisting the depressing influences of the infection is *fresh air*, and, probably better, cold air, because it stimulates respiration and, being more dense, supplies more oxygen in proportion to its volume. In the hospital, except in inclement weather, I have all severe cases placed on the balcony, screened from wind and shaded from too strong a light. The patient is given his food and drink there, but the bed is wheeled into the ward when any other attentions are required. The beneficial effect is often quite marked and soon shown after he is moved out. Usually the breathing is made easier, sleep more restful, the color becomes less cyanotic, the mental state is clearer, and food is taken better and better digested, with less liability of distention of the stomach and bowels. If these effects are produced, the pulse improves, and with the improved circulation there is, no doubt, increased excretion of toxins by the kidneys. The cold air may make the cough more irritating for a time, but this is usually relieved by a mild sedative. No harm can result if the patient is covered, including the head, so as to keep him warm. The disease being of short duration, *diet* is not the important question it is in enteric fever, yet it is desirable that the patient should get food of about the value of 2000 calories per diem. If there is any appetite, he should be allowed to choose his food so long as his desires are reasonable. If he is seriously ill there is seldom any desire for food; then milk, raw or prepared, or its equivalent, will suffice, but the utmost care should be observed that no abdominal distention results, as often occurs owing to the parietic effect of the toxæmia on the bowel.

The greatest danger in pneumonia is from *toxæmia*. To it are chiefly due the dangers from cardiovascular and respiratory failure, results that are largely attributable to the depressing effect of the toxins on the medullary nerve centers. It is of the first importance to counteract the depression of the nervous system. It is therefore important that the two chief signs of nervous depression, restlessness and insomnia, should be relieved if possible. Many means are resorted to for this purpose, such as the cool or cold pack, spongings, general and cardiac stimulants, and sedatives; of these agencies *opium* is probably the most effective. There is no remedy so generally potent to relieve cardiac failure from any cause, especially in the aged. It should be given as indicated, preferably as morphine hypodermically, and early, while the bronchi are still free, as its use later is liable to lead to accumulation of the bronchial secretion. Marked dilatation of the right auricle, as shown by extension of dullness to the right of the sternum in the fourth interspace, is also a contra-indication. If this is much over a finger breadth the dilatation is serious, and there will be marked dyspnœa, some cyanosis,

and increasing bronchial secretion; conditions rendering the use of morphine dangerous, yet in some cases advisable. As to the best means of treating this condition there is much difference of opinion, but all agree that it should be prevented if possible by remedies which stimulate, in the first place, the nerve centers, such as strychnine, atropine and alcohol, and, in the second place, the heart directly, such as digitalis, the caffeine group, and strophanthus; also the application to the præcordium of the ice-bag. The late Dr. Balfour had good results from 10 minims of tincture of digitalis with 10 grains of hydrated chloral, begun early and given three or four times daily. He found that the digitalis prevented depression from the chloral. One of the most potent cardiac stimulants is strophanthin, given intravenously, but this or any other stimulant, in order to be effective, must be given before there is much degeneration of the heart muscle. English physicians generally, and there are no better therapeutists, are much in favor of applying four or five leeches to the right of the sternum as soon as signs of dilatation of the right auricle appear. This leads to the consideration of *venesection* and its indications. Most writers approve of it in robust, full-blooded patients with a strong, high tension pulse. Such patients will bear almost any treatment and will usually "weather the storm" without any aid beyond rest and general care, so that venesection in such cases is seldom a vital question. But what are we to do for those of ordinary vigor, or those even far from being robust, when they show the danger signals of a dilated and dilating right heart? If they are to be saved it must be by prompt, vigorous action; hesitation means failure. The first and urgent indication is to relieve the tension in the right heart, so that its systole may be effective in expelling its blood into the pulmonary artery. Venesection is said to be bad practice in such a case because the patient is already anæmic and lacking in strength. If we bleed we render them still more anæmic, but if we do not bleed the right heart will almost certainly become so distended as soon to cease its efforts to contract. When we are limited to a choice of two evils in other matters we instinctively choose the less; why not in this case? I have for several years advised and practised venesection in all cases showing this symptom-group; always with some relief at least, and, in a large proportion of instances, with recovery if the bleeding has been done before the right heart has been too greatly distended. If a full stream of blood can be obtained, 6 to 10 ounces will suffice; but if the stream is small and trickling, little good will result because the tension will not be lowered quickly enough to permit prompt contraction of auricle and ventricle. If relief can be obtained by a small bleeding taken in a gushing stream, the venesection may be repeated in thirty-six to forty-eight hours if deemed necessary. In the syncopal type venesection is uncalled for, as the heart is not laboring with an excess of blood. *Oxygen* by inhalation has been highly recommended by many for the relief of dyspnœa; my own experience with this agent has not been very satisfactory. A very able physiologist tells me that fresh air contains as much oxygen as can be absorbed into the blood. However, oxygen is highly spoken of by good observers, and has been reported as especially

effective if passed through absolute alcohol in a wash bottle. Given in this way to animals showing heart failure from an overdose of chloroform it is reported to have had very marked effect.

Hydrotherapy.—Hyperpyrexia is fortunately not of frequent occurrence in pneumonia, so that resort to general hydrotherapy is not often called for, especially in the adult, for whom it necessitates too much disturbance, where rest is of such importance. For children to whom the bath can be given easily it often proves of great use in reducing unduly high temperature, stimulating circulation and respiration, quieting restlessness and delirium, and inducing sleep. The temperature of the water should not be much below 90° F. For the adult, cold sponging usually serves to quiet restlessness and give sleep in mild cases, especially if they are in fresh cool air. Much importance is attached to the use of cold compresses to the chest, their effect being attributed to the stimulation of the circulation in the skin, thus aiding the general circulation; and, in the second place, to stimulation of the vasomotor nerves of the pulmonary vessels. Opinions, however, vary as to the existence of pulmonary vasomotor nerves. Some of the ablest experimental physiologists point out that if there is a vasomotor nerve supply to the pulmonary vessels it must be very feeble, as it is undemonstrable. And further, they say that their existence cannot only serve no good purpose but would prove a positive danger, as if stimulated so as to cause spasm by any cause at any time there would be dangerous embarrassment of the pulmonary circulation. Cold compresses doubtless prove useful in some cases, especially if they cause deeper respiration, but their frequent changing is irksome and may fatigue the patient. Is it not possible that their effect is largely psychical, especially to the physician, just as poulticing has been in former times?

DISCUSSION.

Dr. Oliver T. Osborne, New Haven, Conn., agreed with the views expressed in the foregoing paper, particularly with regard to the importance of giving plenty of fresh air. The oxygen tank is useless; what is needed is an abundance of fresh air. The moment that this is furnished the temperature is likely to go down, the nervousness and restlessness to diminish, and the whole circulation to be improved. Also, anything which increases the activity of the skin, such as proper bed-clothing, sponging, etc., tends to cause the kidneys to act better, to diminish the cerebral and pulmonary congestion, and to bring about a general improvement in the patient's condition. A little solid food like cereal is much better than milk alone. Anything which tends to produce gastric irritation or tympanites is the worst thing that can be given. He agreed with *Dr. McPhedran* that nothing is more valuable in the treatment of some cases than morphine. As to stimulants, nitroglycerin is often valuable, alcohol sometimes. Strychnine is administered too often in pneumonia, while digitalis rarely does good, but on the other hand is capable of doing serious injury by overworking an already fagged heart, and may also interfere with the proper action of the kidneys. He commended venesection in selected cases.

Dr. J. N. Hall, Denver, Colo., said that it is not likely that we shall ever be able to reduce the mortality from pneumonia, as we have that from some other diseases, like scarlet fever, diphtheria, etc. Persons suffering from these diseases are usually in good physical condition when they are taken down, whereas pneumonia patients are often physically unsound when they are attacked. In many of the cases the heart, kidneys or other organs have suffered serious injury as the result of some primary disease before pneumonia appears as a complication or sequel. People are most liable to be attacked

by pneumonia when the vitality is low, and this fact tends materially to increase the liability to a fatal termination. Furthermore, a large proportion of pneumonia patients are well along in years when they are taken down with the disease. Pneumonia is often the last puff of wind which blows the senile patient away. When we consider these two points alone, it seems probable that the mortality from this disease will always remain comparatively high.

The President, Dr. Wilson, said that the clinical picture of croupous pneumonia is a diverse one. In each case it is made up of two factors in varying degree, the pulmonary lesion and general toxæmia. Accordingly, when we talk of pneumonia we are speaking of an affection which manifests itself in different patients in many different ways, and this point should be borne in mind when we consider any of the various aspects of the disease. The bacteriologists had worked over the problem of a rational treatment for pneumonia for years, and he expressed the hope that some of us might live to see the dawn of a successful method with bacterial serum. At present, however, we have no specific for the disease and an expectant, symptomatic plan appears to give the best results in the large majority of cases. He agreed with the previous speakers as to the importance of hygiene in the management of pneumonia—plenty of fresh air, an abundance of water, a limited diet, and certain drugs, like the laxatives. He also agreed heartily with Dr. McPhedran as to the value of opium in some cases. Dover's powder, or even morphine hypodermically, can be given in certain cases not only without danger but even with marked benefit to the patient. As already stated, we know of no specific for pneumonia. Quinine, creosote and other drugs which have been lauded as cures for the disease have, after adequate trial by skilled clinicians, been laid aside. Some of the patients get well without anything but expectant treatment. Others die in spite of the most careful and skillful management and treatment. He cited the case of a young man with an extensive pneumonia of the left lung who appeared to be doing very well in almost every way. In examining him, however, he noticed that he became cyanotic whenever he was turned upon his side. He called the attention of the attending physician to this symptom and gave a bad prognosis. The patient died, although for a time there seemed to be every reason to believe that he would get well. That fresh air is an important factor in the management of pneumonia is borne out by statistics from field hospitals in military campaigns. We should not forget, however, that the men who go to these hospitals are picked men physically. At any rate, a large proportion of them recover, and this fact has strengthened our belief in the value of the fresh-air treatment. An initial large dose of quinine, calomel in the form of Dover's powder, plenty of fresh air, and abundance of water, quietude (no frequent examinations by the physician to disturb the patient)—these, in the main, give the average pneumonia patient the best chance.

Dr. Alexander D. Blackader, Montreal, said that several years ago interesting experiments were made by Romberg and Osler to determine the exact cause of death in the infectious diseases. They showed that death was due, not so much to the abnormal condition of the heart muscle, as to diminished blood-pressure throughout the body, as a result of which the patient was bled into his own veins. In pneumonia we have not only the toxæmia, but also the consolidation of the lung and a tendency to lowered blood-pressure, and an abundance of fresh air is of great value in combating these conditions. Experiments have recently been reported which go to show that the exposure of the body to a current of cold air causes a general rise of arterial pressure, while warm air produces a fall of blood-pressure. Others have shown that through action on the nasal mucosa, as by cold, a marked rise of blood-pressure can be produced, the vasomotor stimulation being greater than that which can be brought about by the use of drugs. Thus, in supplying pneumonia patients with an abundance of cold fresh air we have a measure which serves not only to counteract to a considerable degree the depressing effects of the toxins on the vasomotor centers, but also to keep up a constant and even stimulation which, acting throughout the disease, does great good. Warm fresh air does not appear to be equally beneficial. Venesection is usually

performed too late, and, as a result, the clinician fails to secure the good effects which often come from bleeding earlier in the disease.

Dr. D. Olin Leech, Washington, D. C., said that he treated pneumonia on the assumption that there is no specific for the disease, depending mainly upon fresh air, ice-bag to the chest, cold sponging, and a simple expectorant mixture. In some cases he gives codeine freely, and has had no bad effects from its use. In his hospital work he instructs the internes not to give nitroglycerin or strychnine or any other stimulant until their use is clearly indicated; nor does he give alcohol except in rare instances. He believes strongly in the value of fresh air in these cases. They need all the oxygen they can get and the best is that contained in fresh air. The ice-bag is useful in allaying pain and fever and as a stimulant to the circulation. Under this treatment he had lost no cases of pneumonia in his private practice during the past Winter. One patient died in his hospital cases, but that was an alcoholic with a bad heart.

MALARIAL INFECTIONS IN THE CANAL ZONE AND THEIR TREATMENT.*

By F. M. SHOOK, M.D.,

P. A. Surgeon U. S. N.; Lecturer on Tropical Medicine in Jefferson Medical College, Philadelphia, and Georgetown Medical College, Washington, D. C.,

WASHINGTON, D. C.

In this intensely infected focus of tropical malarial fever the most important malarial infection, from the standpoint of diagnosis and prognosis, is the estivo-autumnal, or to use the abbreviated nomenclature in common use on the Isthmus, the EA infections. Single tertian and double tertian infections are very common, and they comprise 50 per cent. of the infections at certain times of the year. They present no material differences in clinical symptoms from the tertian infections in the States, and they yield readily to quinine, when given in a form that is easily absorbed. Quartan infections are very rare, and clinical charts showing quartan fever curves are practically unknown. Occasional blood-spreads show parasites which resemble quartan parasites very closely, and a series of spreads were sent up from Colon this Winter which were undoubted quartans. The principal types of EA infections on the Isthmus may be classified as follows:—

1. *Mild Infections*.—The attack may be preceded by several days of malaise, with headache, backache, insomnia, loss of appetite, the usual prodromal symptoms of nearly all infections; or it may come on suddenly after hard work, exposure, a drinking bout, or after any condition that would lower the individual's resistance. On admission to the hospital the temperature is around 103°, there is considerable prostration (a characteristic of EA infections), and severe headache and backache. Physical examination of a patient with a mild infection such as this is negative, with the exception of some splenic tenderness on deep pressure and in about 50 per cent. of cases a palpable spleen. Blood examination will show an EA parasite to every half-dozen

* Read at the Eleventh Annual Meeting of the American Therapeutic Society, held in Washington, D. C., May 5, 6, and 7, 1910.

oil-immersion fields. A mild case such as this is given 3 grains of calomel on admission, with 20 grains of quinine. The quinine is given in solution or in capsules. The quinine tablets on the market are viewed with considerable suspicion, for it is not at all an unusual occurrence for them to pass through the intestinal tract intact. The calomel is followed by salts the next morning and 10 grains of quinine are given three times a day. An ice-cap usually relieves the headache. The temperature falls by lysis and reaches the normal the third or fourth day after admission, appetite returns and the patient recovers his strength rapidly. After a week's treatment with quinine, 10 grains three times a day, the dosage is cut down to 5 or 10 grains per day. On discharge from the hospital he is advised to take 10 or 15 grains of quinine once a week for a few weeks.

2. *The Severe EA Infections.*—In this type of EA infections there is a high temperature, 104° or 105° , respirations are increased, the pulse follows the temperature, and there is marked icterus, very severe headache and pain in the loins, constant retching and vomiting, and great prostration. The physical findings of these cases differ from those of the foregoing. Over the bases of the lungs there is usually impaired resonance with râles on expiration and inspiration, due to the intense pulmonary congestion and cedema. The spleen is enlarged, palpable, and very sensitive. Blood examination will show from 5 to 10 EA parasites in every oil-immersion field of the microscope. However, these patients have often taken quinine to ward off an attack, and there may be no parasites in the peripheral circulation on that account. Clinically, these cases resemble pneumonia, and one of the commonest errors in diagnosis is to mistake severe EA infections for this disease, and *vice versa*. Malarial fever and pneumonia may both be present in the same individual, neither one affecting the other. A leucocyte count will probably differentiate the two, though some cases of pneumonia have a low leucocyte count; so that it is not at all unusual for a diagnosis to remain in doubt for several days. A differential leucocyte count will sometimes give a clew to a differential diagnosis in these doubtful cases. In these severe infections no time must be lost in getting the patient cinchonized. On account of the nausea and vomiting it is impossible to give quinine by the mouth, and the drug must therefore be given hypodermically. In giving quinine hypodermically the buttock is first selected for the injection. The skin is made surgically clean, and the needle and syringe are boiled, but not the quinine solution. The needle is plunged deeply into the muscle at right angles to the skin and the solution injected slowly. The puncture wound is closed with a few drops of collodion. An abscess following a quinine hypodermic injection is a very rare occurrence if this technique is followed. These severe EA infections get 15 grains of quinine hypodermically every four hours until 75 grains have been given, or until the vomiting has ceased. Sometimes after the first or second hypodermic the vomiting ceases and all the symptoms are alleviated. If this occurs, the injections are discontinued, and 10 grains of quinine in solution or capsule are given t. i. d. The temperature chart of one of these severe infections often simulates the chart of a pneumonia exactly, and also the temperature often

falls by crisis. If it falls by lysis the curve is longer than in the milder EA infections and reaches the normal on the fifth or sixth day, instead of the third or fourth. After these severe infections quinine is given for several weeks. In the cases where it is discontinued a relapse usually follows, which may be as severe as the original attack. Convalescents from such attacks are sent over to Taboga Island, where with good food and rest they rapidly recover strength.

3. *The Mixed Infections.*—Infections with both T and EA are very common. The subjective symptoms are identical with these of an EA infection, but the temperature curves present many anomalies. The treatment follows the same general rule, viz., if there are any pernicious symptoms present, such as extreme prostration, hyperpyrexia, nausea and vomiting, 15 grain hypodermics of quinine are given every four hours for five times, or until the pernicious symptoms have abated. The physical examination of a case with mixed or double infections gives the same picture as that of a single infection, and the convalescence and after-treatment present no unusual features.

4. *The Pernicious Malarial Fevers.*—(a) The comatose type of malarial infection is the most common one in the pernicious fevers. The coma may vary from a deep one in which there is no response, to a semi-comatose condition in which answers to simple questions may be elicited. The temperature curves of these comatose cases follow no rule. They may vary from sub-normal to a temperature of 103° or 104°, with occasional remissions. If the infection is the quotidian form of the EA parasite, the temperature is an intermittent one, rising usually in the afternoon to 104° or 105°. The quotidian infections are highly malignant.

(b) The hyperpyretic type is another of the common types of pernicious malarial fever on the Isthmus. Occasionally, in a patient apparently not very ill, the temperature rises to 102°, 103°, 104°, etc., up to 108° and 109°. Rectal temperatures at death may be as high as 110°. On account of the effect upon the brain there may be wild delirium or perhaps coma. Ocular symptoms, such as conjugate deviation and pupillary dilatation, are not uncommon. Blood examination shows from 15 to 20 EA parasites in the oil-immersion field. There is a generalized icterus, but the color is a shade different from the ordinary biliary jaundice. The spleen is enlarged, and pressure on the splenic area will cause the patient to flinch. The liver is occasionally enlarged, reaching to one or two fingers' breadth below the costal margin. The treatment of these infections is very unsatisfactory, and quinine, either hypodermically or intravenously, does not seem to stay the sporulation of the parasites. The majority of physicians on the Isthmus have discontinued the intravenous method of administration, and such pernicious cases receive quinine hypodermics; starting with a dose of 15 or 20 grains, which is followed by 15-grain doses every four hours. In autopsies on fatal cases the most striking features are the intense congestion and oedema of the lungs and the changes in the spleen. The latter is so softened that it does not retain its shape when laid on the autopsy table, and the pulp is dark

and very friable. In the fatal malarial infections of cerebral type the brain shows surprisingly few gross changes. There may be a darkening of the cut surface, which may show minute capillary hemorrhages, but the paucity of gross changes is very striking. Smears from the spleen, bone-marrow and brain show countless sporulating parasites, provided the smears are taken within twenty-four hours after death. More parasites are apt to be contained in the gray matter of the cerebellum than any other part of the brain.

Malarial Fever and Pregnancy.—In cases of severe malarial fever in pregnant women there is added to the symptom-complex another element of danger. If large doses of quinine are given to control the attack of fever miscarriage will take place in 100 per cent. of cases, while if the dosage of quinine is small there is the danger of pernicious symptoms developing and the case being rapidly carried to a fatal termination with a force that no amount of quinine can overcome. The safest rule to follow is to disregard the foetus and treat the malarial infection as if pregnancy were not present. Very rarely, with the aid of complete rest and small repeated doses of morphine or codeine, miscarriage may be prevented, but miscarriage is the expected event. It is easily handled when it takes place, and does not lengthen the time of illness or influence its course unfavorably.

Malarial Parasites in the Foetus.—The writer has been unable to find in the literature an undoubted case in pernicious malarial fever in which the malarial parasites were found in the foetus. Dr. Norman E. Williamson, of the Isthmian Canal Commission Medical Corps, and the writer examined five foetuses from pernicious cases. In the mothers, smears from the blood, bone-marrow, spleen, brain and placenta showed myriads of sporulating EA parasites, but careful examination of the blood and of all the organs of the foetuses failed to demonstrate malarial parasites.

Malarial Fever and Surgical Operations.—The shock of a surgical operation often brings out a latent malarial infection, which occasionally is pernicious. In surgical cases in which the patient can be kept at the hospital for a few days prior to the operation a prophylactic course of quinine is given, 10 grains three times a day. In acute traumatic surgery it is customary to start 10-grain doses of quinine t. i. d. as soon after the operation as possible. If the prophylactic administration of quinine is neglected a very severe and occasionally a fatal attack of malarial fever will follow the operation.

Malarial Fever in Children.—Children stand the effects of a malarial infection better than adults, and it is not unusual to admit a mother and her child to a hospital ward, both patients showing the same number of parasites in the blood examination, but with the mother desperately ill and the child only slightly so. Children are often brought in suffering from chronic malarial infection, with anæmia and tender and enlarged spleens. Pernicious malaria when it does occur in children not infrequently simulates cerebrospinal fever, and the autopsies show the cerebral capillaries filled with sporulating parasites. In treating the severe infections in children 5-grain hypodermics of quinine are given instead of 10 or 15 grains, and quinine carbonic ester, 5 grains t. i. d., instead of the quinine solution.

SUMMARY.

Experience of physicians on the Isthmus emphasizes the following points:—

1. In tropical malaria quinine should be given either in solution or capsules, as there is danger of the non-absorption of tablets.
2. If properly given, hypodermics of quinine rarely cause abscesses.
3. Quinine will not stay the fatal termination of some types of malarial infection.
4. For treating cases of malarial fever in adults in the tropics which do not show pernicious symptoms an initial dosage of 20 grains of quinine, preferably in solution, followed by 10 grains three times a day, has stood a satisfactory test in thousands of cases.
5. In the treatment of malarial fever in pregnant women in the tropics the safest rule is to disregard the pregnancy and treat the malarial fever in the usual manner.
6. After surgical operations in malarial districts in the tropics pernicious malarial fever may develop unless a prophylactic course of quinine is given prior to the operation.
7. In an examination of five fœtuses from cases of pernicious malaria neither malarial parasites nor pigment were found.

DISCUSSION.

In reply to an inquiry from Dr. Barton as to what preparation of quinine he used hypodermically, Dr. Shook stated that he used the double hydrochloride when it was available; otherwise, an acid solution of the sulphate. The most important point in the paper appeared to him to be the advisability of giving quinine in the tropics before major operations to prevent the subsequent quick development of malarial symptoms: in other words, to prevent a latent form of malaria from suddenly becoming active. Such a manifestation was not infrequently observed after operations when quinine had not been administered previously, and the attacks sometimes proved rapidly fatal. The second point that he wished to emphasize was the advisability of leaving the fœtus out of consideration in treating pernicious malarial fever in pregnant women.

THE PATHOLOGY AND DIAGNOSIS OF PSYCHONEUROSIS.*

By BORIS SIDIS, M.A., PH.D., M.D.,

Medical Director, Sidis Psychotherapeutic Institute,
PORTSMOUTH, NEW HAMPSHIRE.

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IN cases of recurrent mental states, especially of the phobia type, I find on the soil of a sensitive nervous organization the presence of a fundamental state of primitive fear of the unfamiliar and the strange, an instinctive fear characteristic of all animal life and rooted in the impulse of self-preservation. In most people this primitive animal fear, child fear, is inhibited by training and familiar environment, but in our psychoneurotics this instinctive fear is not inhibited, in fact it is even overdeveloped. Under certain unfavorable conditions of training, especially religious, this primitive fear may be combined

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with a developed sense of the mysterious and the result is fear of the mysterious. The two, however, are often simply associated and do not form a composite *fear-state*. *This association of the instinctive primitive fear and the sense of the mysterious and unknown forms the soil on which all forms of anxiety and phobopsychoses grow luxuriantly.* The fear-instinct and sense of the mysterious, when trained by religion and morality, and accompanied by deeply rooted superstitions and prejudices of a religious and moral character, may attach themselves to any sphere of life, sexual, professional or purely personal, and give rise to phobias or to the anxieties of psychoneuroses. The feeble personality of the child becomes the victim of fears. Thus the patient may experience the fear of having committed some awfully wrong act, never being satisfied even when the wrong is made definite,—“there is some mysterious wrong beyond.” There may be the fear of doubt, of not arriving at what is absolutely right and really true. There may be the fear of having committed the unpardonable sin with mysterious communication of unseen powers; the fear of eternal damnation; the fear of ghosts; the fear of remaining alone, or claustrophobia; the fear of open places, or agoraphobia; the fear of loss of personality; or the general vague fear known as panphobia. A few concrete clinical cases may best bring out these fundamental states of psychoneurosis.

CASE II.—Mr. D., a young man of twenty-five. Born in Poland. As far as can be ascertained, the parents as well as the brothers and sisters are all well.

An examination of the patient reveals nothing abnormal as far as physical and mental functions are concerned. Patellar reflex is but slightly exaggerated. There are no sensory, no motor disturbances. Hypnagogic and hypnapagogic hallucinations are rich and varied. The emotional side is fairly well endowed. He is a level-headed fellow, but unusually timid.

The patient complains of severe headaches, often setting in gradually and preceded by a feeling of indisposition, depression, vertigo and distress. During the attack there is hyperæsthesia to touch, pressure, temperature and to visual and auditory stimulations; the body feels cold and ataxic, as if paralyzed. The patient shivers and looks very pale. The periphery of the extremities is bloodless, cold; the face is very pale, the lips are cyanotic, while the head throbs violently. The cold experienced is so intense that the patient has to wrap himself in many blankets, as if suffering from a malarial paroxysm.

Fears have a strong possession of the patient's mind. He seems to suffer from claustrophobia,—he is afraid to remain in a closed place in the daytime and especially at night, but he is not afraid to be on the street, even when it is very dark. When he has to remain alone at night, he is in an agony of fear and cannot go to sleep. Every passer-by is regarded as a robber or murderer, and he quakes at the least noise. When walking in the house in the dark, he has the feeling as if some one were after him, and occasionally even experiences the hallucination of some one tugging at his coat. He is mortally afraid of the dead and shuns a funeral, not on account of superstition (in fact, he is ashamed of it), but on account of some insistent fear that takes possession of him in spite of all his efforts to control it. He has a feeling of weakness amounting almost to prostration, not unmingled with some unaccountable fear.

when he has to visit a cemetery, even if it be in broad daylight and in the company of many people. Any strange object he suddenly comes across in the dark will give the patient the shivers. This fear is very intense when he happens to notice in the dark a moving object. Besides the claustrophobia, the patient has also a fear of dogs, a kind of kynophobia, if we may be permitted to use such a term. The fear is irresistible and is almost as involuntary as a reflex.

The patient's sleep is restless and disturbed by many distressing dreams and nightmares. He dreams of fires, of great conflagrations in which he is in great danger and cannot find his way out of buildings enveloped in sheets of flame and dense smoke. He dreams of being captured by robbers and is in danger of being killed or even of being skinned alive. Occasionally he dreams of his parents being captured and assaulted by brutal, terrible looking men. Thus in one of his recent dreams he saw his father seized by soldiers, imprisoned and condemned to be hanged. The patient often moans in his sleep, cries and wakes up with tears streaming down his cheeks. The anguish experienced in his dreams is intense. So vivid is the dream-consciousness that the patient cannot get over his anxiety for hours and he is sometimes affected by it throughout the next day. Occasionally the patient dreams that wild animals, such as wild dogs, are attacking him and he wakes up in great fright. So intense is the dream hallucination that the fear persists long after he is awake, and he feels as if he had actually gone through a real experience.

An investigation by means of the hypnoidal or intermediate states brought forth out of the patient's subconscious life the following data: When a child of three, the patient lived with his family in a small village near a large forest infested with wolves. In one of the intermediary states a faint memory, rather to say a vision, struggled up,—a vision of wolves and dogs. Some one cried out: "Run, wolves are coming!" Crazed with fear, he ran into the hut and fell fainting to the floor. It turned out to be dogs instead of a pack of wolves. It is that fright in early childhood which has persisted in the subconscious and, having become associated with subsequent experiences of attacks of dogs, has found expression in the patient's consciousness as an almost instinctive fear of dogs.

When about the age of four, the patient went through another experience which left an indelible impression on his subconsciousness. One winter night a fire broke out in the house and the little boy had to be taken out, shivering with fright and cold, into the open air of a frosty night. When about the age of eight, the patient, then living in a small provincial town, experienced another similar shock. A great conflagration broke out in the street where the patient lived. The fire, carried by the wind, spread rapidly, so that his house was soon enveloped in flames and smoke. The patient was so terrified that he was almost in a trance. He seized a saltcellar, rescuing it from the flames, and fled. For six hours his parents lost all trace of him. He himself could not remember where he had been. It was afterwards found that he kept on running through the streets, crying: "Fire, fire!" He was found by a relative of his who took away from him the saltcellar and quieted his agitation. Subcon-

sciously the patient kept on living through those very experiences in his dreams. The experiences lapsed from his consciousness, but persisted in his subconsciousness and found expression in his dream hallucinations, which appeared as real experiences to his subconsciousness. The content of the dreams is varied, largely depending on the sensory content of the total moment-consciousness, but it refers to the same dissociated systems of the patient's child-life.

But why was the patient in such abject terror of dead people? This found its answer in the experiences and training of his early life and especially in a peculiar incident experienced by the patient in his childhood. When a very young child, the patient heard all kinds of ghost stories and tales of wandering lost souls and of spirits of dead people hovering about the churchyard and burial grounds; he heard gruesome tales of ghouls and of evil spirits inhabiting deserted places, dwelling in the graves of sinners and the wicked. He listened to stories of haunted houses and of apparitions stalking about in the dark, coming to visit the living in some lonely deserted places, especially in the stillness of the night. His social and religious environment has been saturated with the belief in the supernatural, as is usually the case among the Catholic populations of Eastern Europe. We should not wonder, then, that an impressionable child brought up under such conditions would stand in mortal fear of the supernatural and especially of the dead. Now when he was about the age of nine, his mother noticed some prominences on his right chest; she was afraid that they might develop into something serious, requiring, possibly, hospital treatment and even a surgical operation, which the popular prejudice did not favor. It was then suggested to the mother that the hand of a dead person possessed the virtue of blighting life and of arresting all growth, and would therefore prove a "powerful medicine," a charm for undesirable growths. It happened that an old woman in the neighborhood died; the little boy was taken into the room where the dead body was lying and the cold hand of the corpse was put on the child's naked chest. The little fellow fainted away in great terror. One can well imagine what a shock such an experience was to the child. It is from that time that his frightful dreams date. The fear of dead people became subconsciously fixed and manifested itself as an insistent fear of the dead and, in fact, of anything connected with the dead and the world of spirits.

It is to the same period that the patient refers the onset of his headaches. Another experience, however, entered here and helped to form the complex manifestations of the dreams and the headaches. The patient had hardly recovered from the shock of the "dead hand," when he had to pass through a still more severe experience. A party of drunken soldiers stationed in the little town invaded his house and beat his father unmercifully, almost crippling him; they knocked down his mother, killed a little brother of his, and he himself, in the very depth of a winter night, dressed in a little shirt and coat, made his escape to a deserted barn, where he passed the whole night. He was nearly frozen when found in the morning, crouching in a corner of the barn and shivering with fear and cold. From that time on the headaches manifested themselves in full severity, with deathlike paleness and intense cold of the body.

Such incidents have been found in other similar cases, coming from lands where social life is still primitive and is unfortunately disturbed by unfavorable political conditions. However this may be, one thing stands out here clearly and distinctly, and that is the fact that the various recurrent psychomotor states, otherwise unaccountable, could be referred, by means of the hypnoidal states, to dissociated systems having their origin in a disaggregated subconsciousness dating back into the patient's early childhood.

"Every ugly thing," says Mosso, the great Italian physiologist, "told to the child, every shock, every fright given him, will remain like minute splinters in the flesh, to torture him all his life long.

"An old soldier whom I asked what his greatest fears had been, answered me thus: 'I have only had one, but it pursues me still. I am nearly seventy years old, I have looked death in the face I do not know how many times; I have never lost heart in any danger, but when I pass a little old church in the shades of the forest, or a deserted chapel in the mountains, I always remember a neglected oratory in my native village, and I shiver and look around, as though seeking the corpse of a murdered man which I once saw carried into it when a child, and with which an old servant wanted to shut me up to make me good.' " Here, too, subconscious experiences have persisted throughout a lifetime.

A few other cases, unaccompanied by detailed psychopathological analyses, may prove of interest:—

CASE III.—The patient is a young man of twenty-eight. Family history good. He is physically well developed, very able, and is instructor of mathematics in one of the foremost institutions in this country. He is obsessed by attacks of loss of personality. The attack is of a periodic character, coming on at intervals of two weeks, occasionally disappearing for a few months and even for a few years, then reasserting itself with renewed energy and vigor. During the attack the patient experiences a void, a panic which is sudden in its onset. He feels that his "self" is gone. He can carry on a conversation or a lecture during the attack in such wise that no outsider can notice any change in him, but his self is gone, and all that he does and says, even the demonstration of a highly complex problem in integral calculus, is gone through in an automatic way. The fury of the attack lasts for but a few moments, which to him appear of long duration. He is "beside himself," as he puts it. He seems to stand beside himself and watch his body, "the other fellow," as he describes it, carry on the conversation or the lecture. He is knocked out of his body, which carries on automatically all those complicated mental processes. For days after he must keep on thinking of the attack, feels scared and miserable, thinking insistently, in great agony, in a vicious circle over his awful attack.

At first the patient could trace this attack only as far back as his seventh year. Later on, earlier experiences of childhood came to light, and then it became clear that the *attack developed out of the primitive instinctive fear of early childhood*, fear of unfamiliar environment, fear of the dark, fear of strange conditions to which he had been subjected in his tender years. The attacks are usually induced by unfamiliar situations; strange conditions, a new

location, strange towns, unfrequented places, or the noise and bustle of a large unfamiliar city, darkness or loneliness in an unusual, quiet place are all conducive to the attack with its intense agony of fear.

Along with the fear goes a highly developed sense of the mysterious, which dates far back into the patient's early childhood, revolving around the problem "*What am I?*" He began to dwell on that problem of "*What am I?*" since he became conscious of himself as a thinking, living personality. This question of "*What am I?*"—accompanied with intense fear and anxiety—keeps on coming to him in his present attacks. He felt the fear and the overawing mystery of the problem of "*What am I?*" As the patient puts it: "*It is the mystical fear of the attacks which overpower me.*" In other words, the patient suffered from the persistent primitive fear of the unfamiliar and from an overdeveloped sense of the mysterious. With the disintegration of these states the attacks were the first to disappear, and then the general depression of the after-effects gradually faded away.

CASE IV.—Another case is that of a lady of forty-three. Family history is good. Patient has always been in good physical health. Eight years ago she married and had two children; both well. She distrusts and fears her husband, suspecting him of some heinous crime. The attacks come in waves, in seizures of brief duration with intense excitement, agonizing fear, palpitation of the heart, chattering of teeth, followed by a long period of depression and worry. When near her husband, she is excited and full of agonizing fear. She feels her husband must have committed something awful. "*There is an insurmountable obstacle between us; what it is, I do not know.*" When finally her husband confessed to her of some escapade of his youth, she was for a time quieted, but soon the fear of the mysterious sin or crime once more arose. The confession did not satisfy her. "*There must be something more beyond.*" This thought keeps on coming to her mind. "*It turns like in a circle,*" as she puts it. She herself is conscious of the predominance in her of the sense of the mysterious. "*Even if my husband,*" she tells me, "*should confess to me the most awful of crimes I would still suspect him of worse ones. There is something mysterious. Nothing definite can satisfy me.*" We may add that the patient and her family have been Christian Scientists for years. She suffered from fears of telepathic suggestive influences and from fears of receiving telepathic death-thoughts, suggestions given by Christian Science. As a child she was dreamy, had a love of the mysterious, and was possessed by a well-developed fear of the unknown.

The patient completely recovered under treatment by the hypnoidal state.

CASE V.—I shall present another apparently "paranoid" case which is extremely interesting from our standpoint. Patient is a young man of twenty-seven years. His parents, though slightly neurotic, have reached a good old age. Patient is physically well. Since early childhood, as far back as the age of eight, he has suffered from intense melancholic depression, often reaching a state of agony. He is obsessed by the fear of having committed the unpardonable sin. He thinks he is damned to suffer tortures in hell for all eternity. He keeps on testing any chance combinations and if his guesses turn out correct,

he is wrought up to a pitch of excitement and panic. For it means to him a communication coming from an unseen world by unknown mysterious powers. Diagnosed as "paranoid dementia præcox," the patient was committed to an insane asylum, from which he was subsequently released.

"The omen testing," he writes in his account to me, "had a monstrous growth. The tests have been concerned with the letters in my reading, with people walking on the street, with carriages and automobiles, fire alarms, sounds of all kinds, the sound of the voice and of birds, hymns in church, the weather, the arrangement of letters in conversation, etc. The general principle has been the same throughout, which is briefly this: If the normal course of events is interfered with in a special way that I arbitrarily arrange in my mind before the happening, I infer, or rather fear, that it is a signal from some extraneous intelligence. As to a signal of what, that also is arbitrarily arranged beforehand. For instance, I considered it was not the normal course of events to be able to predict on what day of the week several people would arrive at the hotel, and still I predicted it. I feared either that I had a supernatural power of prediction or that the people themselves were in some supernatural way forced to fall in with the day I predicted."

The attack proper comes in pulses of brief duration followed by long periods of brooding, depression and worry. The primitive fear of pain, of danger and death, and the sense of the mysterious cultivated by his religious training, reached here an extraordinary degree of development. Among the earliest memories that have come up in the hypnoidal state was the memory of an old woman, a Sunday-school teacher, who cultivated in the patient, then but five years of age, those virulent religious germs which, grown on the soil of the primitive instinctive fear and the highly developed sense of the unknown and the mysterious, have brought forth those poisonous fruits which now form the curse of his life.

Let me read to you another paragraph from the patient's account: "It is difficult to place the beginning of my abnormal fear. It certainly originated from doctrines of hell which I heard in early childhood, particularly from a rather ignorant elderly woman who taught Sunday-school. My early religious thought was chiefly concerned with the direful eternity of torture that might be awaiting me if I was not good enough to be saved."

After a couple of years of persistent treatment by means of the hypnoidal state and methods of association and disintegration of the active subconscious systems, the patient fully recovered. He entered a well-known medical school and took the foremost rank among the medical students.

I could adduce many more cases, but these will suffice as illustrations. In all my phobia cases I find as the basis of the morbid condition the primitive instinctive fear of the unknown, of the unfamiliar,—a fundamental fear-instinct rooted in the impulse of self-preservation,—and an overdeveloped sense of the mysterious. The recognition of these fundamental states by the psychopathologist and their disintegration by treatment are of the utmost importance in psychopathology and psychotherapeutics. The educator may possibly find here some important hints in regard to the bringing up of the young. The Holy

Scriptures claim: φόβος Κυρίου ἀρχὴ Τοφίας, but from our present standpoint we may paraphrase the biblical statement by saying that *the fear of the mysterious is the beginning of phobia*.

Editorial

THE REFLEXES IN HYSTERIA.

THE criterion of selection in hysteria being the difference of sensibility in the two halves of the body, P. C. Knapp¹ made a study of the tendon and cutaneous reflexes in a hundred cases of this disorder. Most of the cases also showed weakness in the hypoæsthetic side. Knapp defends his principle of selection by the usefulness of the patient's comparison of the stimuli in tabes, nerve injury and cerebral hæmorrhage,—hardly comparable problems. He criticises what he calls Babinski's "cruder" methods, making the statement that he has found total anæsthesia rare, as is also total paralysis. This experience is unusual and Knapp should know that Babinski's faradic test has only been applied when anæsthesia is complete. Thomas's and Meige's well-known explanations of the distribution of hysterical sensory loss are stigmatized as "amusing bits of special pleading." The former believes that hemianæsthesia is commoner than para-anæsthesia because in testing the sensibility one arm is usually compared with the other arm and not with the leg; and similarly the legs are compared to each other and not to the arm. Meige points out that the examiner finds the left side of the patient opposite his own right hand and hence is most likely to, and indeed usually does, prick this first in asking the question "Do you feel?" Hence the implied suggestion that the patient may *not feel* is usually made upon the left side first, and thus is implanted there, constituting a left-sided hemianæsthesia,—the commoner distribution.

Knapp implies that others reject comparative tests of sensibility in hystericals for fear of suggestioning. This is not always the case; but it is true that the greatest caution must be used before accepting the dicta of hysterical patients regarding their sensibility. A technician who is aware of when a suggestion is being made and received may institute such comparisons in the investigation of a case.

Knapp also states that there is no definite criterion for the diagnosis of hysteria, as he does not accept that of Babinski. It seems hardly logical to diagnose a disease "without definite criteria." Surely all medical science is busied in a search for these. To the impartial, the very criterion which Knapp adopts, unilateral difference of sensibility, seems only to confirm Babinski's *pithiatic* explanation thereof, for most good observers below a certain age, after which it is hard to change ideas, admit that in most cases suggestibility must be invoked as the cause of the *majority*, at least, of hysterical symptoms.

¹ Journal of Nervous and Mental Diseases, February, 1910.

It is curious, too, that anæsthesia in one's patients is inversely proportional to one's skepticism as to its validity apart from suggestion. I have frequently changed the careless "no" of a patient into the accurate "yes" of truth, which I should surely not have attempted had I been among the credulous of the classical viewpoint. Furthermore, I have often had occasion to demonstrate to a medical attendant that a patient from the very fact of saying "no" signalized that a stimulus was perceived; and it is still easier for the patient to sway a comparison either at haphazard or in a desired direction. Prince has urged that in "certain states of dissociation there occurs an anæsthesia which cannot be modified by suggestion." But this objection is met by the fact that the patient's whole so-called second state is one huge suggestion of which the anæsthesia is a part, firmly associated with the notion of a second personality, and only removable along with this, until indeed some fresh idea (a substitution) is introduced to dissociate the anæsthesia from that personality, a performance of no great difficulty *when the right suggestion is employed*. One may compare the rather childish exhibition of the hypnotist whose subject will insist upon swimming in the imaginary water in spite of all the exhortations of his hypnotizer until the latter by "the magic word" causes him to change his rôle.

Knapp found more exaggeration of the tendon reflexes than exists in healthy people under excitement, as in runners before a Marathon race, of whom 90 per cent. show patellar twitch. Upon the basis of a "larger number," he concludes that "hysteria, like neurasthenia, may cause moderate exaggeration of the tendon reflexes." (To the reviewer "large number" seems a somewhat vague ground on which to build a pathogenesis.) Knapp is justly skeptical about true clonus and lost knee-jerk in hysteria, and yet believes that the temporary loss found after extreme fatigue in Marathon runners may indicate that "conditions of exhaustion in hysteria may abolish the knee-jerk." Would it not be more reasonable to say that conditions of exhaustion, with or without lost knee-jerks, are apt to produce a hysterical state?

Fifty-seven times the reflexes of the two sides differed,—thirty-seven times for the knee-jerk and thirty times for the ankle-jerk (sixty-seven in all. T. A. W.). It was twice as often greater on the anæsthetic side. Six cases showed unilateral spurious clonus. No quantitative estimations are recorded, and the nature of the spurious clonus is not described. The plantar reflex was absent or diminished in forty-seven cases; the fan reflex was not found. Out of fifty-one cases, the abdominal reflex was lessened in twenty-four.

Thus, of the whole series seventy-six showed a difference; skin reflexes, when altered, being so on the anæsthetic side, while the tendon reflexes there were often increased, though sometimes diminished.

Knapp infers that these results "seem to contradict the claim of Babinski 'that hysteria is incapable of modifying the skin and deep reflexes' and are an argument against his doctrine of pithiatism." But he has not considered the fact that any organic state which may or may not change the reflexes may also increase hysterizability. In this regard critics should recall Ashley MacKin-

tosh's analysis of insular sclerosis,² and Cushing's remarkable report that every one of a hundred cases of cerebral neoplasm had been at first diagnosed as hysteria. General intoxicative states, too, and even the menstrual period, greatly exaggerate hysterizability. Nor are the neurones on each side of the body always equally affected by the former. Even cardiac and renal œdema is sometimes unilateral, in the viscera as well as in the subcutaneous tissue.

But there is another factor in the case, viz., the modification of the apparent reflex response by the volition of the patient. No one who has carefully studied hysterical patients can fail to be impressed by their exaggerated behavior in response to many of the solicitations of a clinical examination. The tongue may tremble, the hands be unsteady, the voice quiver; the urine may spurt, the bolus strangle in the pharynx, the respiration be intermitted and shallow or sighing; even tachycardia, palpitation and globus may occur. All these symptoms, it is true, are emotional, and in themselves have nothing to do with hysteria. But they are an index of hysteria in that they occur on account of the *suggestion of alarm* which the clinical examination affords. It is a case of "nervousness" (apprehension) by suggestion.

Similarly it is almost impossible for some people to refrain from tightening the muscles of the limb which the examiner handles, and no inconsiderable part of neurological technique is comprised in means for obtaining relaxation while the reflexes are explored. When diminution is apparent, it is very easy even for a skilled observer to mistake for a diminution of a tendon reflex what is only a quasi-involuntary inhibition of the relaxation of the muscles antagonistic to those concerned in the reflex, which indeed themselves are sometimes tonically contracted to some degree.

When it concerns a seeming exaggeration, an experienced clinician remembers that it is not uncommon for patients to respond *before the hammer* touches the tendon and, although no neurologist worth the name would be deceived by this manœuvre, yet the more refined degrees of the same mechanism are not so easy of detection.

The quasi-involuntary innervation of a physiological muscle group is quite frequent, and is most difficult to detect unless a patient's attention can be completely distracted, an almost impossible feat in some cases of fixed ideas, for the mental attitude is a positive and not a negative one and persists even in sleep in many cases, as Janet's and Freud's work have shown. Of course it is hardly likely that the suggestion of a + reflex should be looked upon as of such importance as to beset even one's sleep; but it has enough potency, once constituted, to surge into activity as soon as aroused by the stimulus of the preparations for testing the jerks. Hence their exploration during sleep, it seems, might afford a valuable criterion as to the alleged alteration of tendon reflexes in hysteria.

It is most significant that the present methods have given opposite results in the hands of Dana to those now published by Knapp.

Regarding the cutaneous reflexes, I notice currently a frequent difference

² Journal of Neurology and Psychology, 1907.

in the response of the abdominal muscles as soon as the patient's attention becomes directed to what is taking place. Of the same mechanism, perhaps, is the familiar experience that every one can much modify the almost irresistible impulse to recoil when his abdomen is suddenly threatened by some too playful friend.

Knapp, who is a most careful observer as well as sound critic, as may be seen by his remarkable paper on *dementia præcox* as a chronic intoxication psychosis, which shows too that he is not afraid of orthodoxy, may have anticipated these objections. But there is no remark in his paper, explicit or implicit, which indicates that he has done so nor gone beyond the principle of selection he mentions, viz., difference of cutaneous sensibility as expressed upon interrogation,—surely an inadequate basis for conclusions of such importance!

TOM A. WILLIAMS, M.B., C.M. (Edin.),

Neurologist to the Epiphany Free Dispensary, Washington, D. C.; Corresponding Member of the Société de Neurologie and the Société de Psychologie of Paris.

Cyclopædia of Current literature

AORTIC ANEURISM, DIAGNOSIS OF.

If we wait for the cardinal signs and symptoms given in text-books, the diagnosis of aortic aneurism will often be made too late to lend material aid to the patient. An early positive diagnosis of this condition can only be made by the X-ray. Emphysema is apt to be present, rendering the physical examination very uncertain. One of the largest aneurisms met with in the present series of 25 cases was discovered accidentally in the routine X-ray examinations. The author reviews the diagnostic value of the various signs of aortic aneurism as exhibited in this series of cases. Visible pulsation was present in but six out of nineteen cases in which clinical records were obtainable. Palpable pulsation likewise presupposes that the tumor mass has reached a considerable size. Expansile pulsation, as the author has shown by the X-ray, is not a constant sign. It does occur in small aneurisms, but in aneurisms large enough to impinge upon the chest-wall the pulsation loses its ex-

pansile character due to the accumulated blood-clot. Further, expansile pulsation can occur in mediastinal tumors other than aneurisms. An abnormal area of dullness extending out of the mediastinum, when present, is a valuable sign of aneurism; but its absence signifies nothing, since small and deep-seated aneurisms are negative to percussion. Probably the most constant sign is a systolic bruit. It was present in eleven of the cases reported, and in several was the only symptom that aroused a suspicion of aneurism. It is not pathognomonic, however, as it occurs also in aortic stenosis. A bruit accompanied by a palpable systolic thrill has greater significance, but permits only of a late diagnosis. Palpable diastolic shock and accentuated second sound are frequently associated with these signs, but if the aortic ring stretches under the increased pressure, they give way to the diastolic bruit of aortic incompetency, with corresponding changes in the pulse and blood-pressure. As the aneurism

increases in size, the base of the heart is pushed down, the organ taking on a transverse position, which is readily recognized by the X-rays and, when present, almost always indicates the presence of an aneurism or other tumor above it. The recognition of differences in the time and tension of the radial pulse on the two sides is often uncertain as a sign of aneurism, being influenced by the personal equation and the frequent anatomical variations. Tracheal tugging is also an inconstant sign, necessitating a sac of considerable size together with adhesions uniting it to the air-passages; it was recorded in but two out of nineteen cases. Mediastinal pressure symptoms are rather complications than symptoms, although in certain types of aneurism some of them, such as recurrent laryngeal irritation or paralysis, compression of the œsophagus, or girdle pains, may be the first evidence of the disease. The earliest and most constant symptoms in the author's cases were dyspnoea and cough, which caused twelve of the patients first to seek medical attention.

If an aneurism be discovered when small, many years may be added to the patient's life by a simple change of occupation, the institution of cautious habits, and periodical rest cures. The diagnosis of small aneurisms by the usual physical methods, however, is very uncertain, and the author has become convinced that the X-rays are essential for their early recognition. Theoretically, there must be a stage of simple aortic dilatation preceding the aneurismal condition, and, clinically, such a simple dilatation may be suspected in the presence of a systolic bruit over the aortic arch without other signs or symptoms. By X-ray examination, however, a dilatation can readily be differentiated from aneurism, since it

pulsates violently in systole, while in a true aneurism as the sac develops and a blood-clot forms the pulsations become less active and finally, when the aneurism has grown large, cease entirely, the pulsations visible and palpable from the exterior being but slight jars transmitted from the heart or blood-stream. The author having noted interference with the passage of a bismuth capsule (the size of a quarter) through the œsophagus in every case of aortic aneurism tested, resorts to this test as a part of the routine examination. It is especially valuable in small aneurisms growing backward from the transverse part of the arch, and registers œsophageal obstruction before the patient is conscious of dysphagia. S. Lange (*Lancet-Clinic*, February 19, 1910).

APPENDICITIS, A POINT IN THE DIAGNOSIS OF.

If one carefully observes the skin of the abdomen, and especially if one stretches it slightly in different directions to obliterate the little corrugations which render the skin partially opaque, thereby increasing its translucency, it will be found that the veins over the inflamed appendix are darker than those in other regions of the abdomen. The veins which are particularly affected are those just internal to the anterior superior spine of the ilium, running upward and slightly inward, and almost parallel with the outer border of the rectus muscle. This sign alone, in the absence of definite localized tenderness, rigidity and other classical symptoms, has not infrequently enabled the author to make a differential diagnosis between pelvic inflammation and inflammation of the appendix. W. W. Skinner (*Proceedings Medical Society of State of New York, Journal of the American*

Medical Association, February 26, 1910).

CALOMEL, VARIATIONS IN THE ACTION OF.

When given in one large dose calomel produces a cathartic effect with little constitutional disturbance. One-grain doses given at regular intervals of an hour for a period of eight hours produce a cathartic action, plus some extra intestinal irritation and plus a general constitutional influence. When the drug is given in doses of one-tenth grain two or three times a day, a general glandular stimulation is induced, without special intestinal disturbance. Unsatisfactory drug therapy frequently results from overlooking such a variation in drug action. H. B. Hemenway (Journal of the American Medical Association, March 19, 1910).

COMPRESSED-AIR ILLNESS.

In subaqueous tunnels the loss of air by leakage is sufficient to maintain perfect ventilation, and, therefore, carbon dioxide, carbon monoxide, and other gases do not accumulate in sufficient quantities to be considered as a possible etiological factor in the causation of compressed-air illness. The direct cause of this condition is the presence of air-bubbles in the circulation; these gas-bubbles consist of nitrogen, carbon dioxide, and oxygen, of which nitrogen is in excess, for the reason that this gas is the chief constituent of the atmosphere, and also does not combine with any of the body tissues. New workers are most susceptible to this disease until the body accommodates itself to this entirely abnormal condition of high air-pressure; and, therefore, it is of the utmost importance that only young, healthy men should be allowed to do this work. New

workers should, when feasible, be started in low pressures, from which in the course of four or five days they may graduate to become, as they are called, "high-pressure men." J. E. McWhorter (American Journal of the Medical Sciences, March, 1910).

FRACTURE OF THE LARYNX.

The author has collected, including five of his own, forty cases, and discusses the question of the indications for tracheotomy in this condition. Operation cannot be considered advisable in all cases, since recovery without intervention is relatively frequent. Of the seventeen cases in this series which ended fatally, eight had been operated, but succumbed either to sudden laryngeal obstruction or to pulmonary or septic complications. A routine preventive tracheotomy, however, carried out before the appearance of threatening asphyxia, would probably have saved eleven of the cases.

Fractures of the larynx may be divided, according to the indications for tracheotomy, into three groups: 1. Benign cases. The fracture is often incomplete and can be recognized only by careful palpation. Notwithstanding the mild nature of the injury, it is advisable that the patients be kept under close observation. 2. Serious cases. These exhibit marked dyspnoea and sometimes hæmoptysis. Immediate tracheotomy is indicated. Secondary operations for the replacement of fragments, tamponing the larynx, etc., may then be thought of. 3. Ordinary cases of intermediate severity. Some misgivings may here be felt in performing an immediate operation. Preventive tracheotomy should, however, be practised whenever the patient cannot be kept constantly under watch. In the present series, all the

cases in which subcutaneous emphysema was present terminated fatally unless operated. Whenever emphysema appears, the early occurrence of inflammatory complications with possible sudden death is to be feared. The author reports five cases, of which three were operated,—one in an emergency and two before asphyxia appeared. The first died, the other two recovered. L. Michel (*Revue médicale de l'Est*, February 15, 1910).

GASTRIC AFFECTIONS, ALUMINIUM SILICATE IN.

The authors have conducted investigations relative to the action of silicate of aluminium upon the gastric secretions and upon disease symptoms resulting from abnormalities of secretion. As prepared under the name neutralon, this substance occurs as a fine, tasteless, odorless and insoluble powder. When taken into the stomach it reacts with the excess of hydrochloric acid to form silicic acid and aluminium chloride. The latter acts as a protective and astringent to the gastric mucosa in a manner similar to silver nitrate and bismuth, and has no toxic effect. In all cases of hyperacidity or hypersecretion, whether of neurotic origin or due to organic disease or injury, this remedy was found to be very effective in reducing the acidity, relieving pain, and aiding digestion. The results were especially good in persistent cases of hypersecretion with motor insufficiency. In a number of cases the drug caused symptomatic improvement where other remedies, as the alkalies, had previously been given with little or no benefit. Gastric hyperæsthesia associated with anæmia and chlorosis was favorably influenced in several instances. Excessive acidity in cases of gastric ulcer was also reduced,

though the prompt cures frequently noted when large doses of bismuth are given on an empty stomach in this affection could not be produced with aluminium silicate. The drug was given in doses of one-half to one teaspoonful in three ounces of water, one-half to one hour before meals. No untoward symptoms were observed. It has not yet been determined whether this substance exerts an intestinal antiseptic influence or not. Rosenheim and Ehrmann (*Deutsche medizinische Wochenschrift*, January 20, 1910).

HAMMER TOE, OPERATION FOR THE CORRECTION OF.

The author describes a method from which he has obtained excellent results. After applying an Esmarch bandage, an incision $1\frac{1}{4}$ inches long is made at the outer aspect of the plantar surface of the toe, with its center at the flexed joint. The skin flaps are dissected laterally, and the incision continued through the subcutaneous structures, being careful to avoid injury to the digital branch of the artery and nerve while continuing the dissection down to the joint. The sheath containing the flexor tendons is then dissected free from the joint and held aside sufficiently to allow of the removal of the articulating joint surfaces with the chisel, taking due care to have sufficient flat surface at right angles to the shafts of the contiguous bones as a result of the arthrodesis. No bone suture is necessary. The subcutaneous structures are then allowed to fall back in place and held by a few fine buried catgut sutures. The skin is closed with interrupted chromic gut and dressings applied. A plaster-of-Paris bandage fixing the toes in hyperextension, making the flexor tendons tense, and thus holding the bony surfaces of

the phalanges operated on in close apposition and in a straight line, is finally applied. After ten days the plaster of Paris is split and the dressings removed sufficiently to expose the field of operation. The dressings are then restored and maintained in the original position for six weeks. The patient is allowed up on crutches after the first dressing. R. E. Soule (New York Medical Journal, March 26, 1910).

HEPATIC CIRRHOSIS, TREATMENT OF HÆMORRHAGE IN THE DIGESTIVE TRACT IN.

Gastric hæmorrhage, with or without hæmatemesis, is frequently encountered in cases of cirrhosis. It is met with especially in the precirrhotic stage of Laennec's cirrhosis, becomes infrequent in the stage of ascites, and shows increased frequency again in the cachectic stage of the disease. In the prophylaxis of these hæmorrhages, sudden changes of blood-pressure in the portal system must be carefully avoided. To this end a milk diet should be prescribed, and the milk given only in small, frequently repeated amounts. Exertions as well as all nervous impressions which might react on the abdominal vascular tension, should be prohibited. Systematic saline purgation will do good, and the application of leeches may at times be availed of in order to reduce arterial tension.

In the event of actual hæmorrhage, hæmostatic remedies, and of vasoconstrictors or coagulants according to indications, must be resorted to. Ergotine, calcium chloride, gelatin injections, and especially injections of fresh antidiphtheritic or other antitoxic serum, are measures which may be employed with success. Rauzier (Journal de médecine interne, March 30, 1910).

HERNIAS, UMBILICAL AND POSTOPERATIVE.

Operations for umbilical and ventral hernia are without mortality, provided the intestine is not gangrenous and the strangulated cases are operated upon without general anæsthesia. Umbilical hernias operated upon by the overlapping method of Mayo are uniformly successful in their final results as regards a radical cure. Ventral hernias have 19 per cent. of known relapses and are best treated by the overlapping method, except in the more favorable cases which permit anatomical apposition of tissues. Large openings with widely separated borders, which cannot be approximated or overlapped, or with sieve-like margins, are best treated by implantation of silver-wire filigree, preferably made by Bartlett's method and laid between the peritoneum and aponeurosis. J. J. Buchanan (Pennsylvania Medical Journal, March, 1910).

HEXAMETHYLENAMIN IN OTITIS MEDIA AND NASAL SINUSITIS.

The author reports two cases in which good results were obtained with this drug, and urges that it be given trial both in middle-ear disease, as already recommended by Barton, and in chronic affections of the nasal sinuses. The first case was of subacute otitis media following a cold, complicated by ethmoid suppuration. After ineffectual treatment for 11 days, the head of the left middle turbinal was resected and 5-grain tablets of hexamethylenamin ordered three times daily. Three days later the ear was healed, hearing improved, and the ethmoid suppuration practically well. In the second case there had been long-standing chronic suppuration of the right antrum. The patient was slowly recovering from an

attack which had lasted all winter, with persistent discharge of pus and subjective sense of fetor, when 5-grain doses of hexamethylenamin were started. In 48 hours the yellow discharge had practically disappeared, and the sense of fetor was gone. After 6 days the discharge was very slight, white and mucoid, and the head felt greatly relieved. E. J. Brown (*Journal of the American Medical Association*, April 16, 1910).

HYDROCELE, RUPTURE OF THE TUNICA VAGINALIS IN.

This is probably a more common accident than is usually supposed. It may occur as the result of traumatism or muscular action or may occasionally take place spontaneously. In practically all cases the tunica vaginalis which gives way is the seat of pathological changes, usually of the nature of an irregular fibrous thickening. The rupture may occur at any point and usually involves the serous layer only, but occasionally the fibrous tunic is torn also. The accident only occasionally results in cure, and more usually the hydrocele slowly refills or a hæmatocele is produced. The best treatment is radical cure of the hydrocele, which is most advantageously performed after the greater part of the effused fluid has been absorbed. S. Hastings (*Lancet*, April 2, 1910).

INTESTINAL PROTEIN INDIGESTION.

The clinical expressions of protein indigestion are manifold; any of the great systems of the body may become deranged. For a time the trouble is functional, but at any moment structural changes may be added. Patients with protein enterotoxæmia are frequently treated for long periods for anæmia, headache, neurasthenia, disease

of the skin, liver, or kidneys, or for "dyspepsia" of undefined type, with but transient, if any, relief. Almost without exception they are self-medicators. A patient may be apparently in good condition; or there may be severe anæmia, marked decrease in weight, headache, lassitude, mental weariness, insomnia, melancholy, constipation, scanty urine, and albuminuria. The history generally covers periods of months or even years, and often includes an unwise use of proteins in the diet. Protein enterotoxæmia is more common in adults, but it may also be found among infants.

It is very important to observe that the enterotoxæmia is almost invariably secondary to some other condition. From imperfect mastication, insalivation and gastric digestion, the food may leave the stomach all ready to putrefy; the composition of the food itself may here be of importance. Delay in the movement of the intestinal contents occurring with gastropnoxis and enteropnoxis or apparently arising reflexly from appendicitis and similar conditions, may likewise be responsible. Some degree of ptosis of the transverse colon is very common, and this may be sufficient to produce slow peristalsis and absorption of the indol and skatol which are always present. Often the original fault is in the pancreatic function. With this or alone the liver's functions may also be deranged. Frequently besides the overeating and imperfect digestion of proteins, there is abnormal innervation, which may either cause headache, etc., or follow shorter arcs and derange the abdominal viscera in their digestive, internal secretory and blood-forming functions.

It is evident that, in order to relieve such conditions not merely must the evidences of putrefaction be sought in

the urine, but the underlying cause must also be found, and this implies exhausting the methods of examination of the blood, urine, fæces, and stomach contents, as well as a careful physical examination. The diagnostic methods detailed by the authors may be summarized as follows: *Urine*. Besides the usual tests, those for indican and for indolacetic acid are especially important. The latter product, described in 1882 by Nencki as urorosein, may be detected by adding a few drops of 0.1 to 0.2 per cent. potassium nitrite solution to hydrochloric acid (sp. gr. 1.2) and floating the urine upon this; a pink, rosy-red, or deep-red ring will appear at the line of meeting. By Cammidge's test the urine gives an indication of the condition of the pancreas. The hepatic functions may be studied by giving the patient 100 grammes of levulose and then testing for glycosuria; if none is found, hepatic function in this respect, and presumably in others as well, is considered normal. Some cases have serum albumin in the urine, owing to renal irritation. Others may show the presence of nucleoalbumin. *Blood*. While the hæmoglobin is but little diminished, and the reds show only minor changes (at times poikilocytes, very seldom myelocytes or nucleated reds), there is a notable proportion of degenerated white cells, often with increase of mast cells and eosinophiles. Commonly the large lymphocytes and the polynuclears are the most degenerated. These findings separate the blood picture from that of an essential anæmia, as well as from conditions where leucocytosis is a feature. They also afford a means of measuring the progress of the case by a decrease in the proportion of degenerated cells and an increase in the hæmoglobin. *Fæces*. Both chemical and microscopic examina-

tion of the fæces should be made. Protein, fat, sugar, starch, occult blood, lactic acid, bile derivatives, and indolacetic acid are some of the products the presence or absence of which should be ascertained. When protein is found in the fæces, the question is whether it is derived from the food or from the patient's blood by exudation, transudation or actual hæmorrhage. In the latter case the search for occult blood and microscopic recognition of red cells, along with pus cells and desquamated epithelia, will help to clear up the condition. Examination of the fæces is also of assistance for the recognition of the functional activity of the important glandular organs. The function of the pancreas may be tested by sewing a small piece of fresh beef in gauze and giving it with the food. When recovered from the fæces only fibrous tissue should remain; if striated muscle fibers are still present, the gastric function is imperfect, but if the nuclei are present in the muscle fibers the pancreas is at fault. Loss of amylolytic power in the stomach may be tested by an Ewald breakfast, removed after an hour and a half. This is important because of the many cases of protein enterotoxæmia in which this organ is primarily responsible. By giving dry meals and insisting upon thorough mastication the gastric condition can be improved to the benefit of the intestinal. A. E. Thayer and R. C. Turck (Medical Record, March 26, 1910).

LEPROSY, THE WASSERMANN REACTION IN.

The author reports his experience with the Wassermann and Noguchi tests in sixty cases of leprosy, of which fifteen were seen in various clinics and hospitals in New York City, and the remaining

forty-five in the Louisiana Leper Home. In fourteen cases both of the tests were performed, the results always proving identical. The following conclusions were reached: A positive reaction is frequently obtained in cases of leprosy giving no history or symptoms whatever of syphilis. The reaction is at times very strong, inhibition of hæmolysis being complete. It is positive chiefly in the tubercular and mixed forms of the disease, especially in advanced and active cases (31 positive out of 38). In the cases of the maculo-anæsthetic and purely trophic type, the reaction is generally negative (3 positive out of 22). The value of the test is not affected in the slightest by the results found in leprosy. Howard Fox (*American Journal of the Medical Sciences*, May, 1910).

MYASTHENIA GASTRICA, TREATMENT OF.

Suitable exercises and proper diet are essential to success in the treatment. If the condition has been produced by excesses of any sort or by nerve strain, these factors must be removed before active treatment is begun. Patients who are unable to take out-of-door exercise are advised to go through, night and morning, seven different movements fifteen times each, to strengthen the abdominal muscles. The movements chiefly consist in flexion and extension of the body at the hips, both in the recumbent and erect postures; also in rotary motion of the trunk. A cold shower bath or plunge after the morning exercises is to be prescribed. In cases with pronounced relaxation of the gastric musculature, the patient should rest for a week in bed. If this is impossible, some form of abdominal support, such as Rose's belt made of adhesive plaster, is a good substitute; it should be worn

about two weeks. Gastric lavage with cool normal saline solution, not more than 8 ounces being introduced at one time, acts as a stimulant to the gastric muscle. Lavage just before meals shows whether food is being taken before the previous meal has left the stomach. It is rarely necessary to use intragastric faradization.

The nourishment should be evenly distributed among the meals throughout the day, and the stomach should not be overloaded. Frequently it is necessary to give six meals a day. The extra meals may consist of a glass of milk or matzoon, with crackers or toast. In very severe cases complete rest of the stomach, with rectal alimentation for a few days, is essential. Patients should not eat when tired, and should lie down for one hour after meals, the stomach emptying itself more promptly with the patient recumbent. In arranging a diet, it should be borne in mind that carbohydrates leave the stomach soon after ingestion, that proteids require about twice as long, and fats much longer still. The presence of fats in the duodenum closes the pylorus reflexly and keeps it closed until they are emulsified. Sugars, syrups and candies are to be interdicted because they produce hypersecretion. A mixed diet is preferable—the carbohydrates in the form of cereals, toast, rolls and crackers, and vegetables, as potato, string-beans and spinach; proteids, as meats, eggs and milk; and fats in the form of butter. Cooked fruits without much sugar and small amounts of ripe, raw fruit are allowable. Six ounces of fluid may be taken with each meal; more than this amount produces stagnation.

The best muscular tonics are strychnine phosphate, gr. $\frac{1}{30}$; extract of ergot, gr. j; extract of coca, gr. ij; extract of

physostigma, gr. $\frac{1}{8}$, and hydrastin hydrochlorate, gr. $\frac{1}{4}$. The strychnine, ergot and coca may be given in a capsule fifteen minutes before meals. A Preissnitz dressing over the abdomen will relieve the distress. A. F. Chace (Post-Graduate, April, 1910).

NEPHRITIS IN CHILDHOOD, TREATMENT OF.

In the presence of acute nephritis with anasarca in children, the following plan of treatment is advocated: All food should at first be prohibited, water alone being given. In a child the amount should be limited to 500 or 600 grams (1 pint to 20 ounces) in the 24 hours; in an adult, to 800 or 900 grams (27 to 30 ounces). The water may be sweetened with table sugar, if this be acceptable, or with milk-sugar, which has a diuretic action. After two days of starvation nourishment must be given, preferably in the form of milk, which is easily assimilable, gives rise to but little toxic material through intestinal fermentation, and also promotes diuresis and lowers arterial tension. At first not more than 500 grams (one pint) should be given daily, together with a like quantity of water, the two fluids being taken alternately at hourly intervals.

In nephritis due to scarlatina the above measures will almost always be successful. In cases where, after an initial period of acuteness, the condition drags on and becomes subacute, milk no longer adequately supplies the needs of the body. To it should then be added carbohydrates, such as various preparations of flour, potatoes, etc.; the nourishing properties of sugar are of real service, and the administration of preparations containing milk and sugar is to be commended. If milk at length becomes distasteful to the patient, it may be diluted

with Vichy, given alternately raw and boiled, etc.

In spite of various methods of modification, however, there are some cases in which milk will not long be tolerated. In others, again, it fails to yield results; the urine continues bloody, the liver and heart fail to diminish in size, œdema persists, and the blood-pressure remains high. In this event, the author advises a trial of the salt-free diet, in accordance with the principle formulated by Achard and Widal, viz. that the systemic chlorides, finding the outlet through the kidneys obstructed, are thrown back into the tissues, and there cause œdema by the absorption of water. The ingestion of salt being discontinued, the retained chlorides are gradually gotten rid of, the œdema disappearing in consequence. The salt-free diet is not claimed to cure the renal condition, serving only to attenuate its effects. The author modifies the usual complete though salt-free diet by omitting proteid substances and giving only starchy foods, sugar and butter. Milk, which contains 1.5 grams of salt per liter, should be limited to very small amounts. The salt-free diet is often successful in obstinate cases where the milk diet has been a failure. The author witnessed a sudden outburst of diuresis under its influence in a case of subacute nephritis in a child. The non-nitrogenous diet when prolonged, however, is detrimental to the organism, and if no complication appears, meats may after a time be taken. Fresh pork and lean ham give the best results; white meats, such as lamb and chicken, may then be used. The amount of salt ingested should still be kept as low as possible. Milk should not be taken with the meals, as it forms an indigestible coagulum with other food-substances.

Complete rest in bed from the outset

is essential, as it minimizes the production of metabolic wastes. Exposure to cold must be strictly avoided. The skin functions should be stimulated by means of general rubbings, gentle massage and tepid baths. Re-infection of the kidneys is to be constantly feared, and all regions of the body harboring germs should be given careful attention. Systematic disinfection of the mouth, nasal fossæ and pharynx should be required; all skin lesions, impetigo, furuncles, ulcers, and follicular inflammations should be considered as possible portals of infection and given suitable treatment; and associated gastro-enteric inflammation should be energetically dealt with. The diseased kidneys being strangled, as it were, in their capsules, wet cupping or leeching over the triangle of Petit is indicated; dry cupping suffices in the milder forms. The hot pack, as a method of obtaining gentle and prolonged revulsive effects, is generally very beneficial. When the skin is sensitive, however, it sometimes causes vesicular or bullous eruptions, which, affording additional foci of infection, contra-indicate its use. In such cases talcum powder should be freely applied over the body, and covered with dry cotton, held in position by a flannel bandage. If, after the initial stage of renal congestion, excretory insufficiency appears, sweating by means of carefully administered vapor or hot-air baths is useful, though if carried to excess, it results in concentration of the blood, retention of toxic products and a tendency to uræmia. Drastic purgatives are useful in provoking a free discharge of toxic fluids. They should be followed by laxatives, especially where constipation is present owing to the milk diet.

The above measures often suffice to maintain the economy in a state of equilibrium during acute nephritis. Where

signs of intoxication appear, however, more active intervention will be necessary. Theobromine causes diuresis by a selective action on the renal epithelium. Its effect lasts but a few days and intolerance may soon be manifested by vomiting, headache, etc. In a child 10 to 13 years old, doses of 0.5 gram ($7\frac{1}{2}$ grains), or at most 0.75 gram ($11\frac{1}{2}$ grains), should be administered. Potassium nitrate, acetate, etc., have long been given, though their use may seem undesirable since Feltz and Ritter have demonstrated the rôle of potassium salts in the production of uræmia. Powdered squill, digitalis and scammony in equal parts are of decided value; 0.025 gram ($\frac{3}{8}$ grain) of each may be made into a pill and 2 or 3 pills given daily. If the circulation begins to weaken and the heart dilates, digitalis should be promptly given either as digitaline in small doses or as the infusion, which sometimes seems preferable. Caffeine should be avoided as it almost always causes annoying symptoms of intoxication in the young. Convallaria or convallamarin may be used instead, and sometimes also sparteine in the dose of 0.04 or 0.05 gram ($\frac{3}{8}$ or $\frac{1}{2}$ grain) in the 24 hours. Among the possible complications of the condition, hæmaturia may be treated by tannin, ergot or ergotin, and by adrenalin if there be lowered arterial tension. Anæmia indicates iron. From the administration of kidney substance or the serum of nephrectomized animals in persistent cases no striking results should be expected. Renal decapsulation has not seemed to the author to be effective in the anuria of acute nephritis accompanied by anasarca, though he believes it to be valuable in anuria due to calculi and in essential hæmaturia. Uræmia in acute nephritis generally ends in re-

covery. Measures such as chloroform inhalations, chloral by the mouth or rectum, wet cupping, bleeding, drastic purgation, pressure on the carotids, gastric lavage, and oxygen where there is cyanosis, will be of assistance. Lumbar puncture relieves headache, and is of marked diagnostic value; the author was enabled by it to confirm the diagnosis of pneumococcic meningitis in a child treated for nephritis. Hutinel (*Bulletin médical*, February 16, 1910).

NITROGLYCERIN AS A PREVENTIVE OF HÆMOPTYSIS IN PULMONARY TUBERCULOSIS.

While there may be other elements in the production of hæmoptysis, it is evident that blood-pressure in the pulmonary area plays an important part. Estimation of blood-pressure in the pulmonary area cannot ordinarily be made experimentally. Clinical observation, however, goes to show that there is a relation between pulmonary pressure and systemic pressure. Such preparations as nitroglycerin are capable of reducing blood-pressure in the systemic system. And by their use it would seem to be possible to keep the pressure in the pulmonary area in any particular case reasonably below the danger point. The drug should be administered in small doses, and may be continued over long periods. The results obtained here have been the result of the study of over six hundred cases of pulmonary tuberculosis in residence, and the treatment as carried out for nearly two years has given time to prove the efficiency of the same. It would seem to be indicated that this drug should be administered in the morning some time before the hour of rising, and subsequently at, say 7.30 A.M., 11.30 A.M., 4.30 P.M., and 7.30 P.M., in order to have the result pro-

duced before the blood-pressure is raised by the exertion incident to toilet, meals, etc. When gr. $\frac{1}{100}$ of nitroglycerin will reduce the blood-pressure 15 mm. in less than ten minutes, as shown by the chart, the same dose, given four times a day for say two weeks, should be sufficient to maintain a lower pressure than the individual's normal.

While the administration of nitroglycerin has not proven to be an absolute preventive, still, in the large majority of cases, with a previous history of hæmoptysis, or the occurrence of the same while in residence there, it has been clearly proven to be efficacious in reducing the frequency of the complication, and in lessening the amount of blood lost when it does occur. F. S. Minns (*Canadian Practitioner and Review*, March, 1910).

PERITONITIS, PREVENTION AND INHIBITION OF.

There is no form of treatment of much use in peritonitis so far advanced that the patient is suffering to a marked degree from general sepsis. Hence our attention must be directed first toward prevention, which is possible in most cases, because peritonitis results from conditions that can be recognized and relieved in time to prevent its development. A careful physical examination should always be made in cases suffering from gastric disturbances, nausea, vomiting, gaseous distention or pain in any portion of the abdomen, remembering in acute cases, however, that violent manipulations are dangerous and may cause a diffusion of septic material. Chronic appendicitis, gastric or duodenal ulcer, or gallstones should be diagnosticated through a careful study of the history and physical examination and relieved by proper treatment before a perforation

is possible. Patients suffering from intestinal obstruction due to strangulated hernia, bands or adhesions, volvulus, intussusception, Meckel's diverticulum, gallstone, or carcinoma, should be operated at once, and should never receive either cathartics or food by the mouth after this condition is even suspected. Gastric lavage should be employed at once in these cases, and again immediately before operation. It is well to leave the stomach-tube (preferably that of Kausch) in place during the operation, in order to drain out any regurgitated intestinal fluid. Opium should never be given before a diagnosis has been made, and never in the presence of any form of peritonitis, unless gastric lavage has been practised. Cathartics and every form of nourishment, including the simplest liquids, are absolutely prohibited, and this applies also to the postoperative treatment.

In all forms of peritonitis except that which follows perforation of the stomach or duodenum, gastric lavage should be practised at once if nausea, vomiting or gaseous distention be present, no matter what other form of treatment be contemplated. No food of any kind and no cathartics should ever be given, even water by the mouth being prohibited until the patient is well on the way to recovery. Rectal instillation of normal salt solution by the drop method, as introduced by Murphy, or by some other safe non-irritating method, is one of the most valuable means of inhibiting peritonitis. It is well to give the salt solution continuously from one to two hours and then interrupt for two hours. In rare cases where this method cannot be employed, normal salt solution should be given subcutaneously in quantities of 500 to 1000 c.c. sufficiently often to overcome thirst and keep the blood-

vessels filled. Large enemata, except by the drop method, should never be given in the presence of peritonitis. Gastric lavage following abdominal section often checks incipient peritonitis by inhibiting peristalsis, and should always be employed in the presence of nausea, vomiting or gaseous distention. In order to prevent gagging, it is well to spray the pharynx thoroughly with a 2 per cent. solution of cocaine ten minutes before the stomach tube is introduced.

In acute appendicitis the appendix should be removed before infection has extended beyond the organ, and in sub-acute or chronic appendicitis, before the organ has an opportunity to cause an acute attack. In acute appendicitis which has been carried through an attack without an operation, it is well to confine the patient absolutely to a liquid diet until his appendix has been removed. In cases of acute perforative or gangrenous appendicitis which have received some form of food or cathartics after the beginning of the attack; which reach the surgeon too late for a safe early operation and are suffering from beginning diffuse peritonitis, gastric lavage, absolute abstinence from food and cathartics by mouth and the slow instillation of normal salt solution by rectum are indicated. This will result in such an increase of resistance against infection that 97 per cent. of these perforative or gangrenous cases can later be operated with safety.

Feeding should be entirely by enemata, preferably consisting of one ounce of a commercial concentrated liquid food dissolved in three ounces of normal salt solution, given slowly every three or four hours through a small rubber catheter introduced into the rectum not more than three inches. From ten to

thirty drops of deodorized tincture of opium should be added to each feeding until there is no longer any pain. Placing these patients in the Fowler position greatly increases their safety. The application to the abdomen of a large, hot, moist dressing of equal parts of saturated boric acid solution and alcohol greatly increases comfort and prevents harm from manipulations. A. J. Ochsner (Boston Medical and Surgical Journal, February 10, 1910).

PUBIOTOMY IN THE TREATMENT OF LABOR IN CONTRACTED Pelves.

As compared with Cæsarean section performed before the onset of labor, or early in labor, pubiotomy presents no advantages either to the mother or the child. When we compare it, however, with the induction of premature labor the question is more difficult; the immediate danger of pubiotomy is certainly greater, and pubiotomy is likely to be attended or followed by a number of serious complications which are entirely wanting after the induction of premature labor. On the other hand, pubiotomy has a fetal mortality of not more than 7 per cent., while the induction of premature labor in pelves with a conjugate less than from $3\frac{3}{8}$ to $3\frac{3}{4}$ inches (9.1 to 9.5 centimeters) is likely to be followed by a fetal death-rate of at least 25 per cent. The right solution of the problem appears to be as follows: In any case in which it is considered inadvisable to perform Cæsarean section, or in which this operation is rejected by the patient, and in which the induction of premature labor has been followed by the birth of a still-born child on one or more occasions, the patient may be allowed to go to full term, and, if necessary, pubiotomy may then be performed. An additional advantage of this plan

would be that in many cases the necessity for pubiotomy would not arise, since spontaneous delivery might occur, a result which is attended with the minimum of risk to both mother and child. Although it is quite true that in the average pregnant woman the operation of Cæsarean section is an easy and safe one, yet pregnancy does occur from time to time in women in whom any abdominal section would be extremely dangerous, and such a patient might, if it were necessary, prefer pubiotomy to the destruction of her living child.

If the patient is in labor when seen and the head fails to engage or is arrested at the brim, then, if moderate traction with high forceps fails, in place of the forcible delivery with forceps of the head through the brim (an operation which entails a fetal mortality of at least 40 per cent.) or the performance of version (which entails even a higher fetal mortality), Cæsarean section should be performed; while if the case is considered unsuitable for a late Cæsarean section, then pubiotomy certainly may be substituted for craniotomy of the living child. Pubiotomy should, however, only be practised if it is certain that the child's life has not been in any way imperiled, and in view of the possible serious complications it is not an operation suitable for private practice, and should only be performed in such surroundings as obtain in a hospital. G. F. Blacker (Lancet, March 19, 1910).

RADIUM, INSOLUBLE SALTS OF, IN THERAPEUTICS.

Sulphate of radium, very finely divided and suspended in saline solution isotonic with the blood, was injected by the author into human beings and various lower animals with a view to

ascertaining whether a permanent state of radioactivity could be induced in the organism and, if so, to what extent such a state would prove of therapeutic value. By injecting the suspension intramuscularly in human limbs which were later to be amputated, and by experiments conducted on rabbits, he was able to show that permanent radium emanations could be established in certain organs of the body, in the blood or in the entire organism, at will. The blood-making organs, digestive functions and nervous system seemed to be stimulated thereby. Various pathological conditions were then treated, including cases of epithelioma, sarcoma, keloid, lupus, chronic osteomyelitis, pulmonary tuberculosis, and septic states. The results obtained were as follows: 1. Disappearance or diminution of pain in cases of malignant tumor, deep foci of infection, tuberculous meningitis, etc. 2. Disappearance or diminution of the inflammatory œdema surrounding malignant growths, tuberculous lesions, infected glands, etc. 3. In a few instances, pronounced lowering of temperature and improvement in the general condition of tuberculous patients. 4. Retrogression of benign growths such as keloids. H. Dominici (*La presse médicale*, March 16, 1910).

RHEUMATIC POLYSEROSITIS.

From a study of fifteen cases of rheumatism complicated by multiple involvement of serous cavities, the author concludes that such involvement can no longer be considered an exceptional occurrence. Pericarditis and acute pleurisy may be simultaneously present in association with an acute rheumatic attack, or may occur as sole manifestation of the disease, joint phenomena remaining entirely in the background.

Their onset is generally sudden. The pericarditis is usually of the dry type and may give rise to dyspnoea, orthopnoea, etc.; the pleurisy, on the other hand, results in bilateral effusion. In a few cases pleurisy and pericarditis are complicated by endocarditis, which may appear in conjunction with them or at a later period. Myocarditis is present in all cases. The pleurisy generally proceeds to recovery without tapping, even when the effusion is extensive, and without producing many adhesions. The pericarditis likewise subsides without causing serious trouble. The accompanying myocarditis, however, persists for some time and often results in permanent cardiac dilatation or mitral insufficiency. The prognosis is favorable in proportion to the time which has elapsed since puberty. E. Mosler (*Berliner klinische Wochenschrift*, February 15, 1910).

SEPSIS, AURAL, TREATED WITH ANTI-SEPTIC VAPOR.

Being dissatisfied with all forms of ablation and irrigation of the ear, which he considers dangerous owing to the likelihood of driving the middle-ear sepsis farther afield into the attic, aditus, antrum and mastoid cells, as well as with much of the instillation of ear-drops now practised, the author has for some years been employing vapors which he forces into the middle ear and its accessory cavities. He finds that this can be carried out with impunity and success as a curative agent for chronic aural discharges. He employs for this purpose a dark, oily liquid prepared under the name *kelvolin*, containing 40 per cent. of the homologues of phenol and 35 per cent. of refined neutral products from coal-tar. It is a powerful germicide, has anæsthetic properties, considerable pene-

trative power, and quickly condenses upon anything held in its vapor. The vapor is driven by means of a special volatilizing inflater into the external auditory meatus and in this way is forced into the tympanum, mastoid antrum and cells, and Eustachian tube. It can also be introduced through an ordinary Eustachian catheter.

Before using the vapor the meatus and tympanic cavity must be carefully cleaned and dried out with fine probes carrying boracic wool. Inflation by the Eustachian catheter and suction by means of Siegel's pneumatic speculum should also be repeatedly performed. Two drams of kervolin are then placed in the boiler of the volatilizing inflater, an ear speculum placed in position, and the rubber-tipped end of the glass tube leading from the apparatus inserted in the speculum. The spirit lamp under the boiler is then lighted, and inflation begun at once, insuring that at first only cold or slightly warmed air and vapor are driven into the ear. By this means the anæsthetic effect of the vapor is gradually established and greater warmth is borne without complaint. When the heat becomes excessive, the operator blows out the lamp and continues to inflate until the vapor is all blown into the ear. Inflation under pressure may also be done by allowing the rubber bulb of the apparatus to become distended, then releasing it, when the vapor is forced into the farthest recesses of the middle ear. The treatment is usually given every third day, though the frequency should depend upon the individual case and the rate of improvement. If granulations or polypi are present, these should first be curetted out under cocaine or general anæsthesia before applying the method, in order that the condensed vapor may reach the seat of disease.

With the procedure described no headache or giddiness is experienced by the patient, as so commonly occurs during and after syringing. After the first few applications the fetor from the ear largely disappears, and the discharges rapidly diminish in amount, then cease. Improvement in hearing and in general health invariably occurs. If, however, after a month's vapor treatment sufficient relief has not been obtained, bacteria are still detected in the discharges, and if the disease is of long standing, then it becomes advisable to perform a radical mastoid operation. W. Stuart-Low (Practitioner, April, 1910).

TABES AND GENERAL PARESIS, ANTISYPHILITIC TREATMENT IN.

The results obtained with mercury and the iodides in paresis do not at all compare in value with those secured in tabes. In a series of 79 cases of the former affection treated with the specific remedies, the sum total of benefit consisted of fairly long periods of remission in 2 instances and slight improvement in 6 others. In a series of 105 cases of tabes similarly treated, of which 86 were beyond a doubt syphilitic, 73 were kept under observation. In 2 of these recovery took place (periods of 18 and 5 years, respectively, having since elapsed), in 18 the condition was arrested (no fresh symptoms having appeared during more or less extended intervals), in 4 temporary arrest was followed by a return of symptoms, and in 8 the progress of the disease was retarded; 30 others were improved, 5 unimproved, while 4 subsequently died.

Of the parasymphilitic affections tabes is unquestionably that most benefited by mercury, the administration of which constitutes the most important measure in its treatment. The mercurial treat-

ment should be energetically carried out. The injection method is the most efficient, and with due care and watchfulness in its application no accidents need be feared. In the above series of cases re-education of the muscles and suspension were used as adjuncts in the treatment, and visits to sulphur springs were also sometimes availed of. Spillmann and Perrin (*La Province médicale*, December 25, 1909).

TETANUS ANTITOXIN.

A case of tetanus with mixed infection is reported, in which the patient received a prophylactic dose of 1500 units of tetanus antitoxin. Notwithstanding this, tetanus developed on the twenty-fifth day and terminated fatally in four days. While several European cases have been reported of tetanus following prophylactic doses of antitoxin, this is the first one the author can discover in this country. An examination of another 1500 unit package from the same lot, made by Dr. M. J. Rosenau of the Hygienic Laboratory, Washington, D. C., revealed that it contained over 2000 units or 500 more than it was claimed to contain. The author concludes that, while 1500 units of antitoxin will prevent tetanus in the case of wounds not followed by severe infection, it may fail when used only once when there exists a mixed infection lasting over ten days. In such cases the dose should be repeated every week while the infection lasts, especially if the latter be due to saprophytic organisms which reduce the resistance of the patient to the tetanus bacilli. C. J. Rowan (*Journal of the American Medical Association*, February 12, 1910).

THERAPEUTIC ABORTION, THE INDICATIONS FOR.

The author epitomizes the consensus of opinion in regard to these indica-

tions. Should therapeutic abortion be used to save a function or a sense? Germann has made a thorough study of the eye troubles incident to pregnancy, and concludes that eye complications dangerous to sight, such as ulcerative keratitis, justify the termination of pregnancy with the object of saving as much sight as possible to the mother. The several forms of auto-intoxication frequently produce eye diseases which justify abortion. Shall therapeutic abortion be resorted to to save the life of the mother when the termination of that life seems otherwise inevitable? To-day when the maternal mortality from Cæsarean section in elective and uninfected cases is practically *nil*, the physician has no right to sacrifice the foetus since he has this method of delivery at command.

In hyperemesis or incoercible vomiting of pregnancy, which occurs once in about 1000 pregnancies, the mortality is about 50 per cent. under treatment by drugs alone. The question as to when abortion should be induced to save the patient's life has been satisfactorily answered by Norris, who, after painting a graphic picture of the earlier stage of this condition, and describing the final stage when the "typhoid" state appears, with rapid, feeble pulse, weakened heart-sounds, fever, restlessness, diminished urine with albumin and casts, and finally delirium, stupor, coma and death, observes that "induction of abortion, to avail, must not be delayed until this typhoid condition appears; it must be resorted to in the earlier stage."

In tuberculosis, artificial termination of pregnancy promises good results only when practised in the early months. Rosthorn favors induction of abortion in tuberculous processes, whether new or old, while Kuttner says that without

interruption of pregnancy the prognosis in tuberculosis of the larynx is exceedingly unfavorable for both mother and child. Many authorities might be cited to show that the interruption of pregnancy had been followed by marked improvement in the patient.

Chronic nephritis is often an indication for therapeutic abortion, and among others which have been deemed justifiable indications may be mentioned mitral or aortic lesions, pyelitis and pyelonephritis, advanced diabetes, hydramnios when associated with crippled respiration or severe diaphragmatic pain, leukæmia, pernicious anæmia, violent chorea, loss of sleep, and continued emaciation. Melancholia may demand operation if the condition is manifestly growing worse; and Jewett believes that in hysterical epilepsy pregnancy should be interrupted. Wilmer Krusen (*Therapeutic Gazette*, March 15, 1910).

TYPHOID FEVER, DIET IN.

The tendency recently manifested to encourage the belief that a typhoid patient, in order to maintain a complete renewal of structure, should take five pounds of milk, or its equivalent, every twenty-four hours is likely to do harm. There occurs a progressive weakening of digestion as the pathologic changes increase and the temperature curve rises. There is diminished secretion of saliva, which makes mastication difficult or almost impossible, and the hydrochloric acid in the gastric juice rapidly decreases in amount. In cases where the fever continues very high, the hydrochloric acid is frequently known to be entirely absent, and it is in these cases especially that mischief is done when a liberal amount of semi-solid food is given. The apparent condition of the stomach and

bowels should always be considered in determining both the quality and quantity of food. When symptoms of gastric irritability and weak motor function, or diarrhœa and tympanites, are well-marked, the diet is defective in the majority of cases.

At the beginning of the attack purgatives should be given freely. Food should be practically withdrawn for several hours, and then the patient can be put on a gradually increasing diet. We have no ideal food for the typhoid patient, but in fully 85 per cent. of the cases the author has treated, milk has seemed to be the best diet. It is easily obtained and administered, and is advantageous in that we can state exactly the amount of nourishment the patient is getting, each quart of milk containing 35 grams of albumin, an equal amount of fat, and 45 grams of sugar. One objection to sweet milk has been that it constipates, but the author holds that constipation in typhoid fever is a favorable symptom. With but a single exception in a thousand cases, he has never seen a constipated case die. Milk does not contain an excess of fat, as has been claimed, if it be fresh and the fat globules uniformly distributed. Milk several hours old, however, when the cream has become firm, if only partly or improperly shaken, is likely to disturb the stomach. The greatest objection to milk is the tendency to form large indigestible curds. This can almost always be avoided by limiting the amount taken at any one time to one-half a glassful. The old method of giving a glassful every 1½ hours day and night will usually produce diarrhœa, tympanites and high fever. For the average patient weighing 150 pounds, a half glassful every three hours, given only when he is awake, is sufficient. If the milk be combined with

lithia water, large curds are less likely to form.

Occasionally a patient is seen to whom milk is extremely repugnant; some other food must then be given. In many cases sour milk or buttermilk can be substituted with advantage for sweet milk. Sour milk has a strong tendency to check putrefaction and is easily digested. Evidences of bacterial putrefaction in patients taking sweet milk may be observed to subside when the buttermilk diet is adopted. Where symptoms arise as the result of an excess of fat in the sweet milk, sour milk is usually well tolerated. E. C. Register (*Charlotte Medical Journal*, March, 1910).

TYPHOID VACCINES, EXPERIMENTAL DATA ON.

The author conducted a series of experiments in animals with the object of ascertaining the best method of bringing about typhoid immunity by vaccination. The degree of protection afforded was found to vary markedly according to the form of vaccination employed. Guinea-pigs were used in the experiments, because of their low natural resisting power to typhoid infection as compared with other animals. The antigens used were as follows: cultures of living bacilli 18 to 24 hours old; cultures 10 days old; bacilli killed by exposure to 53°-55° for one to two hours; sensitized bacilli; bacillary extracts; living bacilli subjected to autolysis. The oral administration of vaccines was also tried. Two weeks after vaccination, each of the animals was given an intraperitoneal injection of virulent bacilli and a subcutaneous injection of 3 to 4 cubic centimeters of 10 per cent. sodium chloride solution. The injections of living bacilli were of such

strength as to produce almost certain death in control animals. Survival of the vaccinated animals was thus significant as to the efficiency of the vaccines. The most active vaccines proved to be: 1. Living bacilli. 2. Bacilli killed by heat. 3. The centrifugated product of the autolysis of living bacilli, subsequently sterilized by means of ether or chloroform. Three successive inoculations in each case were found to be necessary to insure immunity. The living vaccine, though the most efficient, cannot be recommended for human use, as dangerous results may be produced. The second method, while proven valuable by trials carried out in the British and German colonial armies, frequently causes annoying symptoms such as local pain, cedema with lymphangitis, and fever, which so far have prevented its general use. The third vaccine, prepared by the author, likewise showed marked protective power. It is essentially an extract of living bacilli, unmodified by heat, and therefore presenting the advantages of vaccination by living bacilli without its disadvantages in the form of untoward effects. Lasting immunity was conferred by its use in animals. No local pain is produced, since the vaccine contains but few of the bacterial bodies. The relative gentleness of its action, moreover, does away with the "negative phase" effect produced by dead bacilli,—an effect which is dangerous in the presence of epidemics, the vaccinated individual becoming hypersensitive to typhoid infection for a period of one or two weeks. The author believes that the vaccine he describes is the best suited for use in the human subject. H. Vincent (*Académie des Sciences; Bulletin médical*, February 9 and 16, 1910).

Clinical Summary

Of all practical articles and abstracts that have appeared in the Monthly Cyclopædia and Medical Bulletin during the current year.

Actinomycosis. **DIAGNOSIS.** Presence of corpora flava not essential to diagnosis of this condition. Repeated examinations of suspicious material often required. Only injection of actinomycotic pus or ingestion of material upon which actinomyces is grown will reproduce actinomycosis in animals; inoculation with pure cultures unsuccessful.

TREATMENT for actinomycosis of uterine appendages: 1. Extirpation and drainage. 2. For fistula, application of tribromphenol bismuth or irrigation with copper sulphate. 3. Potassium iodide internally, up to 75 grains daily. *Wagner.* Page 290

Addison's Disease. **TREATMENT.** Begin with 3 grains of desiccated adrenal gland three times daily after meals, and gradually increase the dose till temperature and pulse become normal; then maintain last dose. *Sajous.* 75

Adrenals, Diseases of. **DIAGNOSIS.** Adrenal insufficiency is suggested by: 1. Circulatory disturbances (small pulse, low tension, tachycardia, chilliness, white line). 2. Digestive disturbances (anorexia, vomiting, diarrhoea or constipation). 3. Nervous disturbances due to toxic irritation of plexuses around adrenals. 4. General disturbances (anæmia, emaciation, progressive amyotrophy). **DIAGNOSIS** confirmed by benefit from organotherapy. *Boinet.* 27

Anæmia. **TREATMENT.** Seven cases of severe anæmia greatly benefited by transfusion of only 5 cubic centimeters (75 minims) of human blood. No benefit in cases of leukæmia. Transfusion of this amount generally harmless, though blood from certain persons showed some toxicity. *Weber.* 63

In anæmia due to auto-intoxication from gastro-intestinal tract, as often occurs in chlorosis: 1. Favor gastric functions by proper diet. 2. Secure regular bowel movements by laxatives. 3. Begin use of iron, giving following pill: Subcarbonate of iron, 0.10 gram (1½ grains); powdered aloes 0.02 gram (½ grain); extract of rhubarb, 0.05 gram (¾ grain); two pills before meals. *Huchard and Fiessinger.* 298

Angina Pectoris. **DIAGNOSIS.** Presence or absence of signs of organic disease at root of aorta should be ascertained. Signs of general arterial or aortic disease coexisting with history of precordial pain warrant diagnosis. A slight harsh clicking sound accompanying or following the sound of aortic closure, suggesting to the ear a roughening of the aortic cusps, is of value in the diagnosis. *Butler.* 22

TREATMENT. Erythrol tetranitrate has a less marked but more lasting effect than nitroglycerin. Especially indicated in those patients who are awakened at night by the pains. *Huchard and Fiessinger.* 172

Ankylosis. **TREATMENT.** Fibrolysin used with benefit in joints ankylosed as result of rheumatic affections. Single dose used was 2.3 cubic centimeters (37 minims) subcutaneously, sometimes more; largest total amount given was 117.3 cubic centimeters (4 ounces). Untoward effects: sometimes sensation of fatigue on day of injection, and occasionally slight local inflammatory reaction, which disappeared with moist dressings. Best results where ankylosis due to extra-articular connective tissue; less improvement in presence of pus and in gonorrhœal cases. Used in conjunction with hygienic and dietetic measures, warm sulphur baths, and later active and passive movements. *Knotz.* 124

Appendicitis in Pregnancy. **TREATMENT.** In severe cases operate without delay. Mild cases do not demand operation unless there are frequent attacks. When near the end of gestation or in labor, terminate pregnancy and remove appendix immediately after. *Findley.* 160

Arteriosclerosis. **DIAGNOSIS.** Careful ophthalmoscopic examination frequently reveals the earliest signs of arteriosclerosis. *Bruncr.* 23

Arthritis Deformans. **TREATMENT.** Progress of disease often stopped by removal of causes of irritation, such as inflamed appendix, hæmorrhoids, etc. Where primary lesion obscure or no longer operative, best results obtained indirectly by relieving pain in affected joints. This is done by applying an absolutely rigid retention dressing, with the limb in such a position that the antagonistic muscles are in absolute equilibrium. If limbs cannot be brought into desired position without extreme pain, contractures are broken up under anæsthesia, and tendons lengthened, if necessary, by tendoplasty. Plaster-of-Paris dressing is applied, and allowed to remain until pain and irritation have subsided. A new plaster mold reinforced with basket splints and wheat gluten bandages is then substituted. *E. H. Ochsner.* 221

Ascites. **TREATMENT.** Autoserotherapy retards transudation into peritoneum and produces lasting polyuria. Under local anæsthesia withdraw a little fluid from peritoneal cavity with sterile hypodermic syringe, and at once reinject in subcutaneous

cellular tissues. Repeat at six-day intervals, injecting progressively larger doses of ascitic fluid (3, 5, 8, and 10 cubic centimeters). Continue treatment for two months. *Audibert and Monges.* Page 160

Asphyxia. TREATMENT. Adrenalin, slowly administered intravenously; 10 drops of 1 : 1000 solution in 1 dram of saline solution. Artificial respiration. *Sajous.* 75

Asthma. TREATMENT. To arrest paroxysms, adrenalin (5 to 10 minims of 1 : 1000 solution in 1 dram of normal saline) may be slowly injected into a superficial vein or hypodermically. *Sajous.* 75

Brain Tumor. TREATMENT. A decompression operation is indicated where grave symptoms of increased intracranial pressure exist, and especially should not be delayed when papilledema (choked disc) is developing rapidly. If the symptoms do not call for immediate decompression, antisyphilitic treatment may first be tried. *Spiller.* 223

Bronchitis, Chronic. TREATMENT. 1. Potassium iodide combined with syrup of hydriodic acid; may be alternated with terpin hydrate. Creosote is also valuable; combined with whiskey and glycerin it will rarely disagree with the patient. 2. Sedatives or anodynes to be avoided. The least objectionable are bromides, henbane, or codeine. Where dyspnoea or nervous irritability, Hoffmann's anodyne, with the iodide. 3. A mercurial followed by salts, once a week or oftener, reduces cough and expectoration for a time. 4. Persistent counter-irritation to the chest, using compound tincture of iodine; occasional intermissions when skin becomes tender. 5. Inhalations of a mixture of equal parts creosote, alcohol and spirit of chloroform, using perforated zinc inhaler. 6. Patient should not be housed. Change of climate where practicable; preferably to Georgia in winter, Adirondacks in summer. *B. Robinson.* 88

Carbuncle of Face. TREATMENT. Passive hyperæmia by means of band around lower part of neck used with success in carbuncles of face and on back of neck (when high enough). Use band of rubber tissue 3 centimeters broad. Mild constriction sufficient and band should be worn 20 to 22 hours daily unless cedema appears. Relieves pain; on third day purulent discharge sets in, lasting a few days. Avoid squeezing out pus. Intervention with knife unnecessary. *Keppler.* 292

Carcinoma. TREATMENT. Quinine, stirred with water to a paste, used locally in cases of epithelioma where operation refused. Application repeated four times on alternate days. Caustic action at first exerted on ulcers, which later healed completely under simple iodoform dressing. Also useful in palliative treatment of inoperable uterine cancer. The remedy is of diagnostic value, as on ordinary erosions it does not have the destructive effect produced on cancer. *Stroné.* 94

The use of high-frequency currents found valuable in treatment of malignant growths, denuded surfaces, slowly healing wounds, and tuberculosis. On epitheliomas they exert a selective cytolytic action. Infected glands disappear, and discharge becomes odorless. Current has an analgesic effect. Time of application should never exceed 10 minutes. For internal growths current is used after operation to promote cicatrization. *Rivière.* 124

Acetone used in palliative treatment of 15 cases of inoperable uterine cancer. Hardens the tissues and stops hæmorrhage, septic absorption, and odor. After curetting under ether, solution of acetone is poured into the cavity through a conical speculum, contact with normal vaginal tissues being avoided. Hips elevated. Excess drained off through speculum and subsequently by tampon. When discharge begins again treatment is repeated without ether. Pain was not relieved but marked relief obtained from general infection. *Tovey.* 122

Carcinoma of Sigmoid and Rectum. DIAGNOSIS. 1. Early suggestive symptoms: Soreness in lower bowel, borborygmus, cramps, diarrhoea, mucus, pus, or blood, difficulty in completely evacuating bowel, distention in lower abdomen, with history of having felt something move after change of position. 2. Later: Emaciation, weakness, and pain in sciatic regions and calves of legs. 3. Local examination and removal of section of diseased tissue for microscopic diagnosis.

TREATMENT. Where obstructive distention requiring prompt relief, establish artificial anus, temporary or permanent according to extent of morbid invasion. Where immediate relief not essential, operation depends upon position of growth and surrounding infiltration. Complete excision wherever possible, with anastomosis or artificial anus. Preliminary colostomy may be advisable to improve chances of recovery after excision. Where excision of a sigmoid growth not possible, anastomosis may be established in one of several ways; in case of rectal or anal growth, palliative treatment by drugs, with curettage and cauterization. Making of an artificial anus relieves pain, has low mortality as compared with excision, and often leads to distinct subsidence of growth. *Erdmann.* 189

Carcinoma of Stomach. DIAGNOSIS. Danger-signal: middle age, loss of weight and strength, with perhaps some dull epigastric pain. If, in spite of six or eight weeks' careful treatment, symptoms increase in severity, loss of weight becomes more out of proportion to dyspepsia, appetite leaves, and some anæmia appears, diagnosis of probable malignancy is justified and operation indicated. *Deaver.* 175

Malignant disease has been demonstrated by X-rays, through its invasion of stomach-

cavity and resulting changes in peristaltic waves. *Leonard.* Page 178

Cataract. TREATMENT. Euphthalmin hydrochlorate in 3 or 5 per cent. solution used as mydriatic in cases of bilateral cataract where central opacity precedes cortical involvement and where iridectomy for any reason cannot be performed. Vision through the uninvolved cortical portion of the lens thus becomes possible. After using one or two drops in each eye, mydriasis begins in 20 minutes and lasts 4 to 7 hours. No untoward effects observed. *Dufour.* 165

Cellulitis with Gangrene. TREATMENT. Case of diffuse phlegmon of leg with gangrene treated successfully with: 1. Linear applications of thermocautery. 2. Subcutaneous injections of hydrogen peroxide 1 to 2 centimeters above infected area. 3. Passive hyperæmia induced thrice daily by rubber bandage above knee. 4. Daily bathing of part in warm permanganate solution. 5. Wet dressing of hydrogen peroxide. *Petit.* 173

Chilblains. TREATMENT. 1. Measures to allay co-existing irritative influences originating in various portions of body, as the nasopharynx, teeth, respiratory or digestive tracts, etc. 2. Gymnastic exercises of extremities at hourly intervals. Arms raised above head, with alternate flexion and extension of hands and fingers. Similar movements of lower limbs. 3. Protection from cold. 4. Kneading, after raw surface of chilblain has become covered. *Jacquet and Jourdanet.* 162

Cholecystitis. TREATMENT. Irrigation with normal saline solution, at the rate of about six drops per second and with elevation of one foot, of biliary fistulæ, after drainage of gall-bladder for cholecystitis, cholelithiasis or cholangitis: 1. Produces prompt diuresis. 2. Hastens disappearance of chronic jaundice. 3. Often relieves postoperative biliary vomiting. *McArthur.* 87

Curable by diet and hygiene or operation. Cholecystostomy usually adequate. Cholecystectomy when gall-bladder gangrenous or duct completely obstructed; should be performed several months after primary cholecystostomy. *B. Holmes.* 292

Collapse from Hæmorrhage. TREATMENT. Suprarenalin or adrenalin given very slowly by intravenous method. Use 5 minims of the 1:1000 solution to a pint of warm saline solution (105° F.). In urgent cases, 10 drops may be given in 1 dram of saline solution, and repeated at intervals until heart responds. Artificial respiration hastens effects. *Sajous.* 75

Collapse in Infections. TREATMENT. Obscure collapse in infections often due to adrenal insufficiency. As soon as asthenia and lowered blood-pressure appear, administer adrenalin solution (1:1000) or cachets of glandular extract. In children give 10 to 20 drops of 1:1000 solution daily, divided into 5 or 6 doses. *Moizard.* 160

Coryza. TREATMENT. Sodium salicylate causes a cold to abort if taken within 24 to 36 hours. Single dose of 7½ grains (0.5 gram) often suffices. Taken later, it relieves symptoms and shortens attack. It is also valuable in the chronic coryza of gouty subjects. Should be taken after eating, and preferably in small doses, dissolved in half a glassful of water. *Courtade.* 174

Cystitis, Acute. TREATMENT. Collargol beneficial when used locally in this condition or in pyelitis. *Albrecht.* 234

Delirium Tremens. TREATMENT. Veronal used in 100 cases, and all but 3 benefited. Initial dose of 1 gram (15 grains) in incipient cases, repeated in 3 hours if sleep does not follow. Sleep then usually lasts 6 to 8 hours and on waking patient is quiet and feels well. If tremor is still present, 0.5 gram (7½ grains) veronal may be given. The same dose every evening prevents insomnia. Where delirium is not controlled by the first 2 grams, another gram may be given 5 to 6 hours after the second dose. One case of veronal rash noted. *Möller.* 88

Diabetes. TREATMENT. Phosphoric acid preparations valuable in diabetic cachexia. Phosphoric acid, 75 grains; acid sodium phosphate, 150 grains; distilled water, 10 ounces; one tablespoonful in water at every meal. Contraindicated where albuminuria. *Cautru.* 163

Calcium iodide used in 17 cases in doses of 5 to 15 grains three times daily, after treatment with codeine and diet had proved unsatisfactory. In all cases subjective symptoms were improved and amount of sugar in urine diminished. *H. E. Smith.* 164

X-rays projected over hepatic region cause decrease in glycosuria and rise in red blood corpuscles. In one case amount of sugar passed daily was reduced by 400 grams. Particularly effective in grave forms with emaciation and debility, less so in mild cases and those of obese type. *Ménétrier, Touraine and Mallet.* 178

Diarrhœa, Dyspeptic, of Infancy. TREATMENT. Calomel, one grain in broken doses, followed in 2 hours by castor oil, one dram. Daily irrigation of colon. If much vomiting, wash out stomach and colon, and follow by starch enema not exceeding 2 ounces. For two days give barley water, 2 fluidounces every 2 hours; for next two days, whey, 2 fluidounces every 2 hours. *Hollopeter.* 97

Digalen. This form of digitalis is not invariably free from cumulative effect, as has been claimed, but is better borne by the stomach than the galenic preparations. *Mayor.* 164

Drowning. TREATMENT. Adrenalin, 10 drops of 1:1000 solution in 1 dram of saline solution, slowly administered intravenously. Repeated at intervals until heart responds. Artificial respiration. *Sajous.* 75

Duodenal Ulcer. DIAGNOSIS. In cases of epigastric pain coming on some time after

meals, presence of Cammidge's C reaction shows probable existence of a duodenal ulcer rather than a functional hyperchlorhydria in stomach. Five cases in which reaction was positive and duodenal ulcer found at operation. *Herschell*. Page 293

Dysentery, Amœbic. TREATMENT. 1. Rest important, even using opium if required. 2. Calomel at first where patient strong, then magnesium sulphate, 1 dram every 3 hours, as long as scybala being passed. Purgatives bad, however, where initial symptoms very acute, and in late stages. 3. Ipecac, in capsules of animal membrane or salol-coated pills; 30 grains in one dose on first day, reduce by 5 grains on each succeeding day until sixth, then give 5 grains nightly for a week or 10 days longer. Patient should fast 4 hours before taking the remedy, and remain quiet afterward. 4. Colonic irrigations hardly give better results than ipecac. Best is quinine 1:5000, increased to 1:1000; next to quinine is silver nitrate. Have fluid retained 15 to 20 minutes. 5. Appendicostomy where refractory to rectal irrigations. Marked success in 2 cases, using quinine or saline solution through fistula. Perform operation in two stages: first bring base of appendix against abdominal wall, stitching meso-appendix to peritoneum; 48 hours later, apply cocaine to appendix, snip off with scissors and introduce No. 10 rubber catheter. *Anders and Rodman*. 290

Dyspepsia of Old Age. DIAGNOSIS. Of every 100 cases in persons over 65 years of age, 66 are secondary to organic disease of some important organ (kidneys, prostate, heart, lungs, liver, pancreas, chronic gout, etc.); 34 are due to degeneration of gastric and intestinal secretory structures. *Fenwick*. 24

Eclampsia. TREATMENT. Bilateral renal decapsulation employed in three dangerous cases with excellent results, after other measures had failed to bring on diuresis. *Lichtenstein*. 294

Eczema. TREATMENT. X-rays of value in subacute and chronic forms. In vesicular variety, mild applications suffice; in squamous and pustular eczema, more vigorous treatment required. Eczema of lips, ears, axillæ and anal region especially adapted for X-rays; itching relieved. Seborrhæic eczema of face also benefited. *Müller*. 239

Emissions, Nocturnal. TREATMENT. Styp-tol (cotarnine phthalate) found to prolong interval between emissions to from one to three weeks in all cases. Two, then three, styp-tol tablets of $\frac{3}{4}$ gram each administered before retiring, for a month. Fluidextract of hydrastis, 40 to 60 drops before retiring, also recommended. *J. Koenig*. 127

Epilepsy. TREATMENT. Diet low in proteins caused reduction in number of seizures by 14 per cent. Each of the three daily meals given consisted of 125 grams of bread, 16 grams of butter, and 250 cubic centimeters of milk. *Rosanoff*. 89

Exploratory trephining advised in traumatic epilepsy. Eleven cases operated, four of idiopathic and seven of surgical epilepsy. Cysts found in two instances, cicatrices in four, and oedema of pia in all. Improvement resulted in all the cases from removal of oedematous fluid. Epileptic attacks returned in four cases. *Tilmann*. 127

Epithelioma. TREATMENT. Commercial 40 per cent. formaldehyde solution applied in two cases with successful results. After three applications dead neoplastic tissues separated, leaving granulating surface, which later healed completely. Pain obviated by injections of 1 per cent. novocaine solution. No recurrence in ten months. Method suitable for comparatively small lesions without lymphatic involvement, where patient refuses operation. *Hallopeau and Fumouze*. 294

Extra-Uterine Pregnancy. TREATMENT. In first half of an ectopic pregnancy operation for removal of gestation sac is indicated wherever conditions permit. In latter half, however, patient, under favorable surroundings, should be allowed to go within two or three weeks of term before operation, meanwhile being kept under watch. Removal of placenta at operation is of cardinal importance; if this be impossible, placenta should be shut off from peritoneum by gauze. Dependent drainage through vagina should be secured. *Peterson*. 225

Felon. TREATMENT. Operation advised as soon as diagnosis made. Patient should eat a substantial meal before the operation, and remain in recumbent posture until half an hour after operation is over. After applying tincture of iodine, inject sterile 1 per cent. cocaine solution in a circle at root of finger; as much as 3 or 4 grams (45 minims or 1 dram) of solution may be used. If felon very small, inject instead around lesion itself, 1 centimeter from its margin. Five minutes later incise, irrigate with hydrogen peroxide and establish drainage. Rest of treatment includes bathing of part in warm peroxide (1 in 4) and sterile compresses of same. *Appelmann*. 167

Femur, Fracture of. TREATMENT. Combination of Buck's weight and pulley system with suspension by the Hodgen splint gave very satisfactory results. Traction can be accurately measured and maintained, transverse displacement corrected, and comfort greatly increased. After extension is applied, the supporting bands attached to splint are passed under limb, which is then swung clear of bed. Supporting bands are adjusted to make support uniform, and later, if desired, to exert coaptative pressure anteroposteriorly or laterally on the fragments. *Stimson*. 226

Fibroids, Submucous. DIAGNOSIS. Gradually increasing dysmenorrhœa and menorrhagia, with consequent anemia and "nervous debility," are typical symptoms which, in a woman of thirty years or over, should lead one to suspect this condition. In differential

diagnosis, enlarged uterus from subinvolution, metritis, endometritis, and pregnancy should be considered.

TREATMENT. When submucous fibroid large and sessile: hysterectomy. Vaginal operation limited to removal of polypi, owing to importance of exploration of pelvis and abdomen where tumor of some size. Transperitoneal enucleation slightly increases operative risk, but if desired by patient in order to preserve uterus, may be performed. *Truesdale.* Page 225

Fibrolysin. Best given by intramuscular injection in dose of 35 minims (2.3 cubic centimeters), every other day. Desired solvent effect on local connective tissues is kept up by massage of the part. Connective tissue surrounding old infectious foci may also be affected and dormant bacilli set free; hence it is well to search for and exclude previous inflammatory disturbances in every case before using this remedy. *Stocker.* 167

Fistula, Anal. **TREATMENT.** Posterior commissure is weakest part of anal circumference. In ulcerations or small fistulas of this commissure, author makes a triangular incision with apex towards anus. In fissures, an incision $\frac{1}{4}$ inch deep is made into sphincter muscle on each side of fissure, which thus remains undisturbed at defecation and heals more rapidly. *Brick.* 168

Furunculosis. **TREATMENT.** In furunculosis, carbunculosis, acne and subcutaneous abscesses brilliant results from vaccine therapy can be expected. In chronic cases, best results when a fresh vaccine is prepared from the pus every two to four weeks. Cautiously increase dose at successive inoculations. *Thomas.* 161

Gallstones. **DIAGNOSIS.** Too often delayed. In most cases condition begins before fortieth year. Almost every patient will give history of long-standing dyspepsia, capricious appetite, constipation, flatulence largely independent of meals, and discomfort when stomach is empty. Later, acute attacks of pain in right upper abdomen may appear, and finally true biliary colic, with vomiting. Sensation of chilliness is characteristic. Jaundice, hæmatemesis, etc., as well as laboratory methods, are practically valueless for purposes of early diagnosis from gastric and duodenal ulcer. *Deaver.* 175

Gangrene, Diabetic. **TREATMENT.** Currents of air heated to 150°, 300°, 500° C., or even higher, applied repeatedly, found to prevent extension of gangrene and arrest toxic absorption by producing carbonization of the part. Amputation can then be performed with greater safety. *Diculafoy.* 223

Gastro-enteritis of Bottle-fed Infants. **PROPHYLAXIS.** 1. Certified milk or clean milk fresh from cow; if neither available, Pasteurization. 2. Fresh air. 3. Avoid overheated rooms. In hot weather child should be placed out-of-doors at night on properly screened

porch. 4. Avoid overfeeding by giving boiled water to drink. 5. Light clothing and frequent cool bathing. 6. Destroy flies.

TREATMENT. 1. Withhold food for three days; then give barley-water. 2. Have child rest quietly in bed out-of-doors. 3. Wash stomach with boiled water at 100° to 110° F., with a little lime-water added. Before withdrawing tube introduce 2 drams of castor-oil and give thorough colonic irrigation. In cases seen later stomach washing not indicated unless gastric irritability present. After stomach settled give cool boiled water freely by mouth. 4. Colonic irrigations every 4 hours on first day, and later twice daily. Nutrient enemata every 4 hours, following irrigations. Be cautious with cathartics. 5. Tub-bath, lasting 10 to 20 minutes, to control temperature and restlessness. 6. Drugs: Bismuth subnitrate, 1 to 2 drams daily, in a child of one year. Salol, 1 to 2 grains every 3 hours. Opium where pain and continued frequent stools. Brandy in boiled water where prostration; $\frac{1}{2}$ ounce in 24 hours. *Hulse.* 295

Glycosuria. **TREATMENT.** Glycosuria in elderly persons often results from only a certain few carbohydrates used in excess, especially cane-sugar and wheat-starch. Management consists in ascertaining the harmful ones and removing them from diet. Cut off all carbohydrates for a week, and if glycosuria disappears try oatmeal, at first with water containing saccharin or with butter, later with rich cream. Then try potatoes, peas, beans, etc., one by one, examining urine frequently. Open-air treatment of great value. *Vaughan.* 296

Goiter, Exophthalmic. **ETIOLOGY.** Acute rheumatism occupies an important place among infections which lead to development of Graves's disease. *Souques.* 165

Gonorrhœa. **TREATMENT.** Vaccine therapy caused marked improvement or cure in subacute and chronic cases. Functional results good. *Thomas.* 161

Hæmophilia. **TREATMENT.** General: Tonics and a liberal diet. Calcium lactate beneficial for a short time, after which coagulation time again lengthens; if the drug be then left off a few days, its effect will again be exerted when resumed. For local hæmorrhages: Sterilized gelatin or adrenalin compresses, or simple pressure; sterilized gelatin solutions injected subcutaneously also effective. For hæmophilic joints: Pressure and absolute rest. Massage over parts slightly distant from joint to be cautiously begun a few days after development of effusion. If hæmorrhage produces great tension in joint, paracentesis of joint followed by injection of adrenalin solution should be the extent of operative interference. Pregnancy in hæmophilic women: Any indication of hæmorrhage warrants induction of labor. If this refused, give general tonic treatment and calcium

lactate a day or so before expected confinement. *Larned*. Page 228

Hæmorrhage. TREATMENT. Adrenal preparations valuable in capillary hæmorrhage from pharyngeal, œsophageal, gastric or intestinal mucous membranes. Mastication of tablets of adrenal substance, or ingestion of 5-grain capsules of same, causes vasoconstriction. *Sajous*. 75

Artificial gelatin made by combining gum arabic with perchloride of iron, then sterilizing the whole, very efficient when injected hypodermically, increasing coagulability of blood more actively than calcium chloride. *Ciuffini*. 292

Heart, Dilatation of. TREATMENT. In asthenic cardiac disorders with dilated right ventricle, dyspnœa and possibly cyanosis and œdema, the adrenal principle improves oxidation and metabolism in the cardiovascular muscles and tissues at large. Tablets of $\frac{1}{2}$ to 2 grains of desiccated gland after meals. *Sajous*. 75

Heart, Neuroses of. TREATMENT. In cardiac irritability: 1. Caffeine citrate and tincture of strophanthus, both best given in tablet-triturate, are promptly effective. Caffeine relieves headache and vertigo when present. Cactus useful in some cases; acts more slowly. 2. Local applications, as cologne, spirits of camphor, ammonia. 3. Light and easily assimilable diet. Avoid meats. 4. Quiet and rest for weeks at a time. 5. Nerve tonic: combined glycerophosphates of lime and soda, gr. v-x t.i.d. after meals. 6. Where gastric or intestinal intolerance: milk of bismuth or lactobacilline tablets. 7. To promote sleep: gentle massage of lower limbs before retiring. If hypnotic required, bromural, gr. v-x. *Beverley Robinson*. 163

Hernia. TREATMENT. A truss never cures a hernia in adult life, and rarely during childhood. Losses from disability due to hernia avoided only by early radical operation. *A. C. Wood*. 20

High Enemata. Only where the sigmoid is abnormally developed can a soft rubber tube be introduced higher than six or seven inches in rectum. Short tube six inches long best for all sorts of enemata when using water for fœcal evacuation. It is possible to cleanse entire colon by using a short tube of $\frac{1}{2}$ inch caliber. *Soper*. 61

Hyperchlorhydria. DIAGNOSIS. Excess of free HCl alone does not warrant a diagnosis of primary hyperchlorhydria, which shows variable symptoms, both gastro-intestinal and nervous. Though 31.6 per cent. had lost weight, the appetite was generally good and examination of the gastric contents and fœces showed that digestive power was but little impaired. The nervous manifestations included periods of depression and mental confusion, irritability, various phobias, numbness, paræsthesias, and attacks of faintness. Male sex and constant mental strain seemed to be predisposing factors. *G. M. Piersol*. 65

Ileus, Paralytic. TREATMENT. Atropine found valuable in 8 cases. Inject 1 milligram ($\frac{1}{64}$ grain) hypodermically and follow shortly after by a stronger dose of 3 to 5 milligrams ($\frac{1}{22}$ to $\frac{1}{12}$ grain). Improvement and abundant fœcal discharge within ten hours. *Lederer*. 229

Incontinence of Urine. TREATMENT. In persistent or increasing incontinence following labor operation is usually necessary. In the average case the Frank operation, combined with anterior and posterior colporrhaphy and an appropriate operation for retroversion when required, will bring about a cure. In marked dilatation of the urethra of long standing or where the muscular wall of the neck of the bladder and urethra have atrophied, Gersuny's operation offers best hope of cure. *Miller*. 90

Infant Feeding. Salts of cow's milk sometimes cause tendency to convulsions; treat by temporary salt-free diet. Sugar intoxication or intolerance of fats may likewise exist; treat by elimination of these from diet. *Neff*. 24

Intussusception. TREATMENT. Lateral anastomosis performed in 2 acute cases and advocated in preference to resection because of its comparative simplicity and safety. Tumor was found to disappear subsequent to operation. Not applicable, however, to gangrenous cases. *Parry*. 125

Iodine. As skin disinfectant. Some hours before operation field is shaved dry and painted with 10 or 12 per cent. tincture of iodine. Dry sterile dressing. Painting repeated on operating table. Author shaves and thoroughly cleanses skin 12 hours before iodine applied. Primary union in every case. *Jewett*. 63

Leprosy. TREATMENT. Oil of chaulmoogra is best given as a saponified preparation, in keratin-coated pills; the purified oil can also be injected in doses of 1 gram three times a week. Nastin injected in doses of 1 cubic centimeter gave good results. Great persistence in treatment, even after relief of symptoms, found advisable. Local treatment by resorcin, hydrogen peroxide, ichthyl, thiosinamine, etc., and baths, also useful. *Kupffer*. 169

Lupus Erythematosus. TREATMENT. Constitutional: regulation of diet to avoid overloading intestine; coffee or tea contra-indicated; quinine often useful. Local: in hyperæmic stage, cooling lotions and ointment of subacetate of lead, ichthyl lotion or ointment; in chronic cases, strong solution of ichthyl or iodine liniment; in severe conditions, linear scarification or light touches of thermocautery. High-frequency currents in subacute cases. Finsen light, X-rays or radium in chronic cases: particularly useful where thickening of the integument. *Morris*. 63

Meningitis. TREATMENT. Early relief from excessive intracranial pressure by means of lumbar puncture advocated in treatment of

uncomplicated cases of all forms of meningitis, including tuberculous. Earliest possible recognition of pressure symptoms required, for which purpose total and differential leucocyte counts are of value. Four cases of meningitis reported (including one tuberculous), which recovered after lumbar puncture. *Hultgen.* Page 298

Meningitis, Cerebrospinal. TREATMENT. Lumbar puncture as soon as distinct meningeal symptoms noted, draining away spinal fluid,—the more, the better. Next inject Flexner antimeningococcus serum in spinal canal; quantity of serum should equal but never exceed quantity of fluid drained away. If lumbar puncture yields dry tap, and meningeal symptoms continue, aspirate lateral ventricles, if in an infant, through anterior fontanelle, and if in an older child, by the Kocher method: Shave small patch of scalp and make one-inch linear incision 3.5 centimeters from sagittal line and 5 centimeters anterior to sulcus centralis. Expose bone and perforate it with Doyen perforator followed by a burr, leaving cup-shaped fossa and exposing dura. Gently insert hollow exploratory needle, with blunt point and side-openings, perpendicularly into second frontal convolution; at a depth of 4 to 5 centimeters ventricle is readily found, particularly if distended. If pus present, drain ventricle and then wash with normal saline until fluid returns clear. Inject 20 to 25 cubic centimeters of serum. Repeat this procedure daily until tapping of ventricles is negative. If symptoms of intracranial pressure, as vomiting or convulsions, appear immediately after injection, however, repeat procedure only once in 48 or 72 hours.

Case of an infant two months old reported, in which intraventricular method of treatment led to complete recovery. Infant was fed at the breast, bowel function insured by enemas or an occasional dose of castor oil, and diuresis promoted by giving water. *Fischer.* 129

Metrorrhagia. TREATMENT. Excessive menstrual discharge in young girls, due to blood changes, often arrested by following: Subcarbonate of iron, 0.10 gram ($1\frac{1}{2}$ grains); ergot (Bonjean), 0.05 gram ($\frac{3}{4}$ grain); quinine hydrobromide, 0.01 gram ($\frac{1}{16}$ grain); extract of belladonna, 0.005 gram ($\frac{1}{2}$ grain); two pills before meals. *Huchard and Fiesinger.* 298

Nausea, Postanæsthetic. TREATMENT. Olive oil given by mouth in thirty cases of ether anaesthesia, after partial restoration of consciousness. In only one patient was nausea observed after its use. Where nausea had already begun it was at once checked by administration of the oil. *Graham.* 91

Nephritis, Acute. SURGICAL TREATMENT. Case of severe acute nephritis in a man 25 years of age, with no urine passed for 5 days, saved by decapsulation of both kidneys (Edebohl's operation). A few hours after

operation both kidneys resumed function. *Karo.* 43

Nephritis, Chronic Interstitial. TREATMENT. 1. Diet. Fairly full diet combined with free elimination usually gives best results. A little meat with short fiber (as mutton, chicken) may be allowed at noon, and in morning or evening some fish; vegetable food, preferably farinaceous; milk freely; stimulants prohibited. Urine and general condition of patient should be watched in relation to diet. 2. Hygiene. Freedom from anxiety and overwork; moderate exercise; warm, dry and equable climate. 3. Physical measures. Free sudation by hot-air baths, vapor baths, or hydrotherapy, carefully avoiding renal congestion. 4. Drug therapy. Sodium iodide, gr. xv-xxx; sodium phosphate, gr. xxx-xlv; sodium chloride, gr. xc; water, Oij; to be taken freely as a drink. Purgatives. Where marked anæmia: Basham's mixture or triple arsenates with nuclein. In failing compensation: digitalin combined with a vasodilator, as one of the nitrites (at first in small doses). Veratrine (0.5 milligrams or gr. $\frac{1}{32}$ every half hour until pulse relaxed) is a safe and effective vasodilator for continued use. In bad cases opium in small doses (2 to 4 minims of deodorized tincture) strengthens heart and dilates arterioles. When complications occur, stimulants, diuretics, purgatives and diaphoretics may be indicated. In dyspnoea, quebrachine hydrochlorate or aspidospermine valuable. *Butler.* 171

Neuralgia. TREATMENT. One to two grains of 1 : 1000 adrenalin ointment applied to skin over affected area in neuralgia and neuritis produces ischæmia of the hyperæmic nerves and thus arrests pain. *Sajous.* 76

Obesity. TREATMENT. Strict vegetable diet for 4 to 6 weeks, then 150 to 200 grams of lean boiled meat 3 times a week or once daily. This diet kept up for months, and tends to protect from returning corpulence. If weight begins to increase, drop meat again for 4 to 6 weeks. Such diet best corrects obese tendencies without impairing general health. Supplement by exercises and hydrotherapeutic measures. *Albu.* 25

Osteomalacia. TREATMENT. In a case of non-puerperal osteomalacia, after two years in bed and failure of all other measures, suprarenal extract given according to Bossi's technique. From 8 to 10 injections of 1 cubic centimeter made each month. By the thirtieth injection great improvement was manifest, and in time the entire syndrome arrested, with almost complete restoration of function. *Bernard.* 92

Otitis Media, Chronic. TREATMENT. Perhydrol in 2 to 6 per cent. solution found useful. Patient drops solution into ear and remains on side for 10 minutes; auricle is then dried and cotton inserted in meatus. Where much suppuration, repeat morning and evening. Inspissated pus is dislodged, and cholesteatoma also yields. *Bresgen.* 125

In late stages:—If tube diseased: inflation, with bougieing if stenosis exists. Intratympanic injections of menthol oil, iodine solutions, pilocarpine, menthol giving best results. Where fixation of the ossicles: pneumo-massage; injection of fibrolysin sometimes valuable. Operative measures: mobilization of the malleus, synechotomy and tenotomy of the tensor tympani, eventual excision of the malleus and incus. *Yearsley.* Page 61

Patella, Fracture of. TREATMENT. In all compound fractures, prompt operative intervention is demanded. In subcutaneous fractures, operation may be deferred from 3 to 5 days. In the interval flexion is prevented by a posterior plaster-of-Paris splint, and absorption of fluid hastened by compression with gauze or elastic bandages. In operating, prepatellar fibroperiosteal tissues must be sutured, and all tears in soft tissues surrounding patella carefully repaired. To assist in maintaining apposition of bony fragments, patella is circumferentially looped by a ligature passed close to its periphery and imbedded in the quadriceps tendon and ligamentum patellæ midway between their anterior and posterior surfaces. Where separation slight and prepatellar tissues practically untornd, procedure may be limited to looping fragments and fortifying prepatellar tissues by V-shaped kangaroo tendon sutures, without entering joint-cavity. Otherwise, all fluid and clots in joint and subquadricepital *cul-de-sac* may be removed by gauze swabs mounted on artery forceps; irrigation inadvisable. While patient still under anaesthesia, apply moulded and padded plaster-of-Paris splint covering posterior and lateral surfaces of limb, with leg in full extension and thigh slightly flexed. This splint is to be used for about a month. First motions of patella should be lateral. Begin cautious flexion of knee one month after operation. *Heineck.* 114

Pelvic Inflammation. TREATMENT. Abscess. Simple vaginal incision with drainage; if condition becomes worse, abdominal section, by extraperitoneal method if possible, should be attempted. *Esch.* 62

Hot mud compresses over abdomen recommended in chronic exudative adnexal inflammations and pelvic exudates. The heat is much better borne than in hot-water applications, and 10° C. greater heat can be applied. If surface be covered with woollen cloths, heat retained for several hours. Causes hyperæmia and promotes removal of exudate. Contraindicated in acute cases. *Cukor.* 63

Pemphigus. TREATMENT. Quinine in large doses used in two severe cases with pronounced benefit. One patient was given 23 grains daily for two weeks, then 31 grains daily. No tinnitus, vertigo or vomiting resulted. *Berggrath.* 230

Pericarditis. ETIOLOGY. Myocardial degeneration, leading to dilatation, predisposes

to pericarditis. Overaction of heart may induce pericardial inflammation. Chronic adhesive pericarditis frequent but often impossible of diagnosis, serious symptoms arising only when myocardium itself is diseased. *Brooks and Lippencott.* 26

Peritonitis. PROGNOSIS. Degree of improvement in circulation caused by intravenous saline infusion is an index of the extent of vasomotor paralysis, the effect persisting in proportion to recuperative power of vessels. If infusion causes no circulatory improvement little benefit can be anticipated from operation. *Lichtenberg.* 126

TREATMENT. Restrict the amount of tamponing and never insert a tampon between loops of intestine. Fowler position always exerts favorable influence. *Dege.* 64

Peritonitis, Tuberculous. TREATMENT. Air injected in peritoneal cavity after paracentesis in three cases of the exudative type, with recovery. After removal of exudate by trocar, air is forced in by emptying water from a large syringe into the aspirator jar. *Florio.* 238

Phenolphthalein. Acts in about 6 hours and has no constipating after-effect. Sometimes loses its effect on continued use, and may cause diarrhoea. Dose: 3 to 5 grains *t.i.d.* in powder, pill or capsule. Five grains are probably the largest safe dose. In a child, begin with ½ grain. *Gilbride.* 172

Placenta, Premature Detachment of Normally Situated. TREATMENT. Rupture of membranes and rapid delivery not to be done till uterus contracting, patient rallied, and os somewhat dilated. Where no contractions, no dilatation, and patient in collapse, use tampon and binder until patient and uterus have recovered. This enables uterus to withstand pressure of blood within it and so controls hæmorrhage. *Goldstine.* 300

Pleural and other Effusions. TREATMENT. To prevent recurrence, after aspiration, of serous effusions into the pleura, peritoneum, tunica vaginalis, etc., 8 minims to 2 drams (according to size of cavity) of suprarenalin or adrenalin in four times the quantity of saline solution may be injected into the cavity. *Sajous.* 76

Strong galvanic currents employed in serous effusions, using as positive electrode a cotton wad soaked in 10 per cent. sodium bicarbonate solution and as negative electrode one soaked in 5 per cent. tartaric acid. Daily applications of one hour, with current of 15 or 20 milliampères, gradually and cautiously increased up to 50 or 60. Fluid promptly reabsorbed in many cases of peritoneal, pleuritic and even pericardial effusion. *De Renzi.* 234

Pleurisy, Syphilitic. DIAGNOSIS. All serous exudations in syphilitics cause deviation of the complement; hence a diagnosis of syphilitic pleurisy, as distinguished from

pleurisy of other origin in a syphilitic, must be based on data other than the serum reaction. *Roger and Sabaréanu.* Page 173

Poliomyelitis, Epidemic. PROPHYLAXIS. Nasal and buccal secretions should be disinfected. *Fleener and Lewis.* 231

Puerperal Infection. LOCAL TREATMENT. In ulcerative endometritis, vaginal douching and drainage of uterine cavity. Where retained material with normal temperature, or where serious hæmorrhage, prompt evacuation of uterine cavity. Where moderate fever and general condition good, delay interference a few days to a week, awaiting spontaneous evacuation. Where high fever or severe toxic symptoms, especially if virulent streptococci in vaginal discharges, curet. If symptoms of extra-uterine infection, strictly avoid curettage (unless serious hæmorrhage). Curettage, where indicated, best done with finger. *Winter.* 300

Pyelitis in Infants. DIAGNOSIS. Of 9 cases in children ranging in age from 9 months to 2½ years, 6 had high fever; 5, frequent micturition; 3, chills; 1, pain, and 1, tenderness in lumbar region. None vomited. Diagnosis depends on urinary findings: pus, epithelial cells, occasionally blood-corpuscles, and no casts.

TREATMENT. Urotropin, ½ to ¾ grain every two hours, very effective. *Gray.* 174

Pyloric Spasm of Infants. TREATMENT. High rectal instillations of Ringer's fluid (sodium chloride, 7.5 grams; potassium chloride, 0.42 gram; calcium chloride, 0.24 gram; boiled water, 1 liter) gave good results. Half a liter of solution is introduced in 2 hours, and the procedure repeated morning and evening. Vomiting ceases after a few days' treatment. *Rosenstern.* 232

Rheumatic Heart Disease. DIAGNOSIS in children. 1. Subcutaneous nodules generally indicate active cardiac disease. 2. Evening fever without previous cause suggests fresh cardiac inflammation. 3. Joint pains. 4. Sudden appearance or increase in anæmia. 5. Persistently frequent pulse. *Carr.* 26

Septicæmia. TREATMENT. In the presence of persistently low blood-pressure, hypothermia, and cyanosis, adrenalin is valuable when very slowly administered intravenously in the proportion of 5 minims of the 1:1000 solution to a pint of warm saline solution (105° F.). It enhances pulmonary and tissue respiration and the activity of the immunizing process. *Sajous.* 75

Collargol found valuable in septicæmia and pyæmia of medium gravity, as well as in obstinate febrile states due to reabsorption of toxins and associated with anæmia. Should be given in all cases of puerperal infection. It is best administered by slow intravenous injection of 1 to 2 c.c. of a 5 or 10 per cent. suspension. Probably acts as a catalytic, accelerating oxidation. *Albrecht.* 234

Shock. TREATMENT. Suprarenalin or adrenalin, very slowly administered intravenously; 5 minims of the 1:1000 solution to the pint of warm saline solution (105° F.). In urgent cases, 10 drops may be given in 1 dram of saline solution. Artificial respiration hastens effects. *Sajous.* 75

Shock, Postoperative. PROPHYLAXIS. Pituitary extract (1 cubic centimeter of 20-per-cent. solution of posterior lobe) was injected in three cases before complete recovery from the anæsthetic, in conjunction with normal saline by rectum. The pulse, previously barely perceptible, almost at once became large and bounding, slow, and regular, this effect lasting 12 to 16 hours. *Wray.* 93

TREATMENT. In shock after abdominal operations, remove two skin-sutures near navel and insert glass tube joined by rubber tubing to receptacle containing saline solution at 112° F. Pass the tube upward beneath omentum and transverse mesocolon to region of solar plexus, and run in one pint of hot saline, causing rise of blood-pressure by heat and pressure stimulation of sympathetic system. Remove tube, cover wound with gauze, and apply binder to sustain pressure. Inject 10 ounces of hot saline in rectum every 2 hours. *Hopkins.* 159

Skin Growths and Ulcerations. TREATMENT. Powdered potassium permanganate used as a caustic for benign and malignant neoplasms, lupus, keloids, chancre, cavernous angiomas, etc. Surrounding healthy skin is protected by rings of adhesive plaster piled one over the other, with central opening slightly larger than area to be cauterized. Powdered permanganate is then poured in and covered over with adhesive. After 48 hours, a softened mass alone remains of the growth. Upon removing this a sharply-defined depression is revealed, which heals rapidly. The procedure is usually painless. *Finck.* 232

Splenic Enlargements, Primary. TREATMENT. Iron, arsenic, iodine, glandular and marrow extracts have only a temporary or uncertain action in these conditions. X-rays cause general improvement in Banti's disease, and should be projected over the spleen through an aluminium screen. Except in infantile splenic anæmia, splenectomy is, however, often preferable in that it yields lasting benefit. *Bozzolo.* 175

Stricture of Urethra. TREATMENT. OPERATIVE. Median incision down to urethra, dividing structures of bulb in median line. Divide stricture by longitudinal incision 1½ inches long. Remove excess of scar tissue, or excise whole strictured portion if necessary. Mobilize anterior segment of urethra and join to posterior segment without tension, sutures being passed from without inward. If roof of canal has been left intact, bring together margins of longitudinal incision transversely, as in pyloroplasty. When ¼ of circumference sutured pass No. 28 sound into urethra; com-

plete the sutures around it. Open urethra on the sound at a point as far behind stricture as possible and introduce No. 12 (English) soft-rubber catheter. Suture wound in layers, leaving space at lower angle for catheter. Resection applicable to all strictures of bulbomembranous portion not amenable to gradual dilatation and not complicated by infiltration of urine or fistulas. *Cabot.* Page 126

Suprarenin. Poisonous dose varies with the individual. Danger arises from: 1. Concentration of solution used. Large amount of a weak solution is without danger. 2. Method of introduction. Intravenous injection gives immediate bad effect; locally or subcutaneously it is well borne. Author employs solution of 0.64 gram suprarenin borate in 100 cubic centimeters of 0.5 per cent. novocaine, made up fresh from tablets for each operation; 125 cubic centimeters of such solution used without danger. *Braun.* 127

Syphilis. TREATMENT. Mercuriol found useful to alternate with the protiodide and in cases where the ordinary preparations of mercury cannot be assimilated; gr. j three or four times daily. Author advocates course of twenty inunctions of the official ung. hydrarg. at the outset of every case of syphilis, before beginning internal administration. Where latter causes serious gastro-intestinal disturbance, and the symptoms of the disease are marked, inunction treatment is to be adopted. Course of three weeks of inunctions in the spring and fall for four or five years recommended. In cases of ulcerating tubercular syphiloderma and gummata best results obtained using potassium iodide (gr. x-xx *t.i.d.*) along with mercurial inunctions twice daily. Mercury is as valuable in tertiary as in secondary syphilis. *Christian.* 45

Tabes. TREATMENT. Strychnine in gradually increasing doses arrested progress of the condition in almost all cases. Begin with $\frac{1}{30}$ grain *t.i.d.*, increase to $\frac{1}{20}$ at end of first week, to $\frac{1}{16}$ at end of second, then add one drop of a solution of 1 grain of strychnine in 1 ounce of water. Increase by a drop every day till total dose is $\frac{1}{8}$ grain *t.i.d.*, which is maintained for 3 months. Then increase as before until $\frac{3}{16}$ is reached, maintain for 3 months, etc. Maximum dose of $\frac{1}{2}$ grain being reached, it is maintained for a year, then gradually reduced. Results obtained: pains disappeared, bladder and bowel control regained, locomotion much improved; general amelioration. *Hammond.* 236

Tetany. TREATMENT. Infundibular extract (20 per cent.) of Burroughs, Wellcome & Co., recommended; given by intramuscular injection in doses of 7 drops *t.i.d.*, or oftener. If used subcutaneously it might cause necrosis of skin by vasoconstriction. Not poisonous. *Ott and Scott.* 99

Tetany, Gastric. TREATMENT. Soluble calcium salts rapidly control symptoms in the tetany of gastrectasis; continued use required.

Large saline infusions, as well as parathyroid preparations (nucleoproteid) by the mouth, are but slightly effective. *Kinnicutt.* 123

Tic. DIAGNOSIS. True tic, which is of psychic origin, and is a sequel to the unhindered repetition of a once voluntary purposive act, is distinguished from spasm, which is due to irritation of any reflex arc of the bulbospinal tract, as follows: 1. Movement slower. 2. Occurs in volleys. 3. No muscular weakness. 4. Reflexes normal. 5. Painless. 6. Disappears in sleep. 7. Pseudo-coördinate and intentional. 8. Influenced by volition or emotion, and followed by satisfaction. Upon this distinction depends whether treatment shall be surgical, medical or psychotherapeutic. *T. A. Williams.* 5

Toxæmia of Pregnancy. TREATMENT. Failure of thyroid gland to hypertrophy during pregnancy probably related to toxæmia. Administration of thyroid beneficial by supplying this deficiency and by diuretic action. Saline extract of fresh human thyroid proteids more rapid and reliable in action than ordinary sheep thyroids. Hypodermic use of thyroid proteids greatly superior to oral use. *Ward, Jr.* 27

Traumatic Neurosis. DIAGNOSIS. In response to galvanism the anodic closure contraction equals or surpasses the cathodic closure contraction, as in the reaction of degeneration, but in tracings of muscular contractions the peaks are not rounded as in the reaction of degeneration, but sharp and angular as with normal contractions. Increased excitability is observed on both affected and sound sides. *Larat.* 124

Tuberculosis, Pulmonary. DIAGNOSIS. X-ray method contributes to early diagnosis. Where symptoms point to pulmonary lesion but no physical signs are demonstrable, radiography may show peribronchial infiltration or enlarged bronchial glands. Later, consolidated areas and cavities can be accurately located at any depth within the lung. *Leonard.* 177

TREATMENT. Mercury succinimide administered hypodermically in 8 cases caused general improvement and appeared to exert a marked controlling influence over the tuberculous process. *Freeman.* 90

Beechwood creosote given both internally and by inhalation affords much relief to symptoms in nearly all cases and in all stages. It is also valuable as a preventive in those predisposed or exposed to the infection. Rest, fresh air, proper food, with or without lime salts. *Beverly Robinson.* 23

Menthol ointment (30 or 40 per cent.) used with benefit. It is rubbed in daily for 10 minutes, skin of back, chest and thighs being successively employed. Improvement manifest alike in symptoms and physical signs. Probably acts directly on involved tissues. Treatment should be persisted in for 4 months or more. Also valuable in old fibroid pneumonias. *Stepp.* 238

Early tuberculosis treated by antiseptic inhalations with remarkable results. Solution used: Phenol, creosote, spirits of chloroform, of each 8 cubic centimeters (f3ij); tincture of iodine, spirits of ether, of each 4 cubic centimeters (f3j). Of this 6 to 8 drops are poured on the felt or sponge of Yeo's perforated zinc inhaler, and inhaled regularly every hour in the daytime, as well as 2 or 3 times during the night, when patient is awake. Cough is thereby relieved without sedatives and expectoration facilitated. Where hæmoptysis, add turpentine to the solution. In all cases patient should rest in bed for a week, with windows of bed-room open. In second week he may rise for an hour or two daily, and later walk in the open air every morning. When temperature is normal, use of inhaler may be gradually left off. *Lees.* Page 93

Tuberculosis, Superficial. TREATMENT. Mercury succinimide (gr. $\frac{1}{2}$ subcutaneously every other day) with mercury protiodide (gr. $\frac{1}{4}$ by mouth *t.i.d.*) gave good results in two obstinate cases of scrofuloderma and one of pharyngeal infiltration. Curetting, cauterization and X-rays ineffective until mercury added. *Hertzberg.* 25

Typhoid Fever. INTESTINAL PERFORATION. Mortality after operation for perforation in children is below 50 per cent.—25 per cent. lower than in adults. *Jopson and Gittings.* 25

RUPTURE OF SPLEEN. This accident occurs most frequently in beginning of the third week, or in convalescence. The enlarged typhoid spleen should be merely touched daily, not handled. **PROPHYLAXIS:** Ice-bag to the spleen. **DIAGNOSIS:** Preliminary pain under left costal arch, sudden increase of pulse-rate by 20-30 beats, evidence of internal hæmorrhage, followed by rapid rise of temperature; liver dulness not obscured; X-rays. **TREATMENT:** Immediate saline infusion and Fowler's position, splenectomy, followed by continuous peritoneal lavage with two glass tubes, below diaphragm and above pubis. *Bryan.* 28

TREATMENT. Alcohol compresses to the abdomen in children advocated in preference to the cold tub-bath treatment, which author regards as favoring hæmorrhage or perforation and as liable to work injury to the heart. Compresses used in 12 severe cases which were rendered milder. Pad of absorbent cotton or eight thicknesses of gauze wrung out in 85 per cent. alcohol (90 per cent. for adults), applied to abdomen, covered with cold-water gauze compress, and held in place by flannel band. Water compress renewed every hour, alcohol compress every 2 hours. Acts by local active hyperæmia, while alcohol absorbed stimulates heart. Used also in peritonitis and appendicitis with benefit. *Cheinisse.* 122

Ulcer of Leg, Syphilitic. TREATMENT. Reduce alcohol consumed. Mercury and iodides, preferably organic iodides, well diluted, alternated with courses of strychnine particularly when ulcer again becomes sluggish. General antiseptic application: Boro-

glyceride 3j, hot water Oss. Locally, black or yellow wash; solution of phenol (1 to 100); tincture of iodine (1 to 4 or 5 of hot water); ammoniated mercury or yellow oxide ointments. Dry treatment: Zinc oxide 3iij, calomel, 3ss, infusorial earth q. s. ad. 3j. X-rays have benefited some cases. Where ulcer resists cure due to tethering of its edge to underlying bone, apply antiseptic fomentations, scrape ulcerated surface with Volkman's sharp spoon, undercut edges with scalpel, and draw them together, freshening skin-margins. *W. Evans.* 23

Uncinariasis. DIAGNOSIS. In mild cases eosinophilia is often not available for diagnosis. Following method recommended: Dilute fecal material ten times with water and centrifugate at high speed for 6 or 8 seconds. Pour off supernatant fluid, shake sediment with water, and centrifugate again just long enough to throw eggs to bottom (usually 2 seconds). Repeat once or twice, remove sediment with pipette and examine for eggs. Calcium chloride solution assists in removal of debris. Large amounts of feces may have to be examined before eggs discovered. *Bass.* 168

Vomiting in Infants. TREATMENT. Condition often a mere habit, vomiting reflex being established owing to former injudicious feeding. Administer chloral, bromide or chlorotone until habit is broken; or better, exhaust the vomiting center by giving harmless emetic, as wine of ipecac and carbonate of ammonium, half an hour before feeding. Latter method used in 55 cases; immediate cure in 30, and improvement in 10. *Pritchard.* 239

Vomiting of Pregnancy. TREATMENT. Adrenalin used with success in a case previously uncontrollable. Ten drops of 1 to 1,000 adrenalin solution given morning and night, at first in enema of 150 grams (5 ounces) water with 20 drops of laudanum, after 3 days in ice-water by the mouth. Nutrient enemas also given. Vomiting ceased on second day, and on third patient could retain a little food. Recurrence of nausea toward end of pregnancy relieved by 10 drops daily for 5 days. *Rebaudi.* 94

Whooping-Cough. TREATMENT. Oxygen used in 30 cases. It is given at each paroxysm. Cyanosis subsides and suffocation is prevented. Child keeps in good condition with appetite throughout. It is best inhaled through a funnel; 10 to 12 liters necessary to control a paroxysm. Where broncho-pneumonia threatens, oxygen should be inhaled every hour; it renders lung aseptic. *Weil.* 64

Quinine salve applied to nasal mucous membrane with benefit. Used 1 to 2½ grams of quinine in 10 to 15 grams of lard (30 grains to 2 drams in 1 ounce), and introduced piece of salve size of pea into each nostril 3 to 4 times daily with glass rod, head being thrown back. Symptoms much improved after 3 or 4 days. Especially effective in very young children. *Berliner.* 301

The American Journal of Physiologic Therapeutics.

This new journal, which, as its name indicates, is devoted to physiologic therapeutics—a term which includes the subjects of hydrotherapy, thermotherapy, phototherapy, electrotherapy, radiotherapy, massotherapy, vibrotherapy, mechanotherapy, pneumotherapy, psychotherapy, serotherapy, dietotherapy, climatotherapy, and hygiene or preventive medicine. As all these methods of treatment are of considerable value when judiciously employed, all physicians should become familiar with them. Hence the great value of our new contemporary.

Book Reviews

MEDICAL DIAGNOSIS. A Manual for Students and Practitioners. By Charles Lyman Greene, M.D., Professor of Medicine and Chief of the Department in the College of Medicine, University of Minnesota, etc. Third Edition, Revised. 725 Pages, with 7 Colored Plates and 248 Illustrations. Philadelphia: P. Blakiston's Sons and Co., 1910. Flexible leather, \$3.50.

These leather-bound medical manuals of Blakiston's are useful and excellent books; we have already expressed our appreciation of "Emergency Surgery," by Sluss, and several others, most of which have passed through more than one edition. This "Medical Diagnosis" of Greene's has already established its reputation, which is steadily growing. It is an excellent book, compact, convenient in size, and yet fairly complete. The marginal summaries on each page prove of great use. The illustrations are admirable, just enough and not too much. The reviewer has re-read with much pleasure many of the chapters, because of their clarity, succinctness and suggestiveness. For the undergraduate student it is peculiarly adapted by reason of its arrangement and simplicity; for the advanced student it is most satisfactory as well as suggestive. It is in vivid contrast to some of the unwieldy, monster volumes that cumber our shelves, providing interesting verbiage, but no more practical help than we find in this handy little book.

The colored plates are as good as those in many larger works; the index is full and complete. In brief, we value this book and are confident that others will do the same.
—J. M. T.

MODERN SURGERY, GENERAL AND OPERATIVE. By John Chalmers Da Costa, M.D., Professor of Surgery and Clinical Surgery in the Jefferson Medical College, Philadelphia; Surgeon to the Philadelphia General Hospital; Consulting Surgeon to St. Joseph's Hospital, etc. Sixth Edition, Revised and Enlarged. Octavo of 1502 Pages, with 966 Illustrations, some in Colors. Philadelphia and London: W. B. Saunders Company, 1910. Cloth, \$5.50, net; Half-morocco, \$7.00, net.

The sixth edition of this excellent work, which is dedicated to Professor Halsted of Johns Hopkins, shows evidences of a most painstaking revision. Almost every section has been altered or added to, and the book shows an increase in size which, as we learn in the preface, the author views with "regret and apprehension." Among the new subjects considered, the following may be mentioned: arteriorrhaphy, as developed through the investigations of Murphy, Carrel and Matas; Crile's arteriovenous anastomosis and Brewer's tubes for transfusion of blood; the use of Halsted's aluminium bands in the treatment of aneurism; the operative treatment of recent fractures; Horsley's operation for chronic spinal meningitis; the use of positive and negative air-pressure in intrathoracic surgery; Murphy's method of treating acute peritonitis; Cushing's operation of decompression for brain tumors; Bier's intravenous local anesthesia; the parathyroid glands; the intraglandular extirpation of goiter; the Lorenz treatment of hip-disease by weight bearing and fixation; cystoscopy and ureteral catheterization; Bier's treatment of inflammation; Wright's views on inflammation; immunity, with a sketch of antibodies, opsonins and phagocytosis; bacterial vaccines; tuberculin in diagnosis; Wassermann's reaction; the serum diagnosis of cancer, etc., etc. The volume is remarkably complete and, in common with the former editions, well illustrates the author's unusual ability to present condensed information in a readable form. The vast and constantly augmenting field of modern surgery has been covered in a manner useful alike to the student and the busy practitioner. The illustrations are amply sufficient and the index very full. In short, the author is to be congratulated on the excellence of the sixth edition, which we take pleasure in recommending as one of the best, and certainly the most complete and up-to-date, of the recent single volumes on surgery.

[End of Editorial Department.]

The General Field

The City Playground Movement

One of the many encouraging indications of the present era is the recognition by people of civic spirit that healthful recreation under proper supervision is absolutely essential to the moral and physical benefit of the rising generation.

A crowd of boys were recently rounded up and brought before one of the Philadelphia city magistrates on the charge of trespass. They had been guilty of the crime of playing ball on a vacant lot on which the "No Trespass" warning had been displayed. The magistrate promptly discharged the youthful "trespassers" with a word of warning. No doubt, he could not consistently with his position say all that he thought about the matter.

It seems to be something peculiarly out of touch with the present period of enlightenment to invoke the majesty of the law in such a case.

All fair-minded citizens are now coming to realize the importance of supplying wholesome recreation for young people. The boundless activity of the growing boy must find expression in some way, and the most wholesome outlet for such energies in the cities is to be found in athletic sports.

It is likely that the city playground movement will be developed on practical lines with great benefit to a large number of boys. It is, however, but a step toward what seems likely to develop within a few years if we are to judge by the signs of the times. The next logical step beyond the playground is the farm

school, and that idea seems to be taking hold of philanthropic citizens to a considerable extent.

If a means can be provided by which the schoolboy of 12 to 16 years can be given an opportunity to spend the summer on a model farm, the physical, moral and industrial benefits will be beyond calculation.

There seems to be very little that the average city boy can do during his summer vacation. He may perhaps secure temporary employment at very small wages in some factory or store, but it is a physical misfortune usually if he does. Having spent nine months in the school-room he should have the balance of the year in the open air. If he can be given such an opportunity and at the same time secure his board and clothes, and incidentally at that impressionable age gains a correct and practical appreciation of what an open-air life means, it may completely change his outlook on life and enable him to become an ambitious, hustling, successful American citizen instead of perhaps living a dreary, half-starved existence as an operative or clerk in a city store.

The lack of physical stamina of the city-bred descendants of city-bred parents was very thoroughly demonstrated in the Boer War. If population is to be considered as a financial asset to a country, every encouragement should be given to movements to provide an open-air existence for the adolescent schoolboy. In this praiseworthy cause no one can lend more effective aid than the physician.

Redeeming the Waste Places

Along the Gulf of Mexico there has been begun a plan of reclamation of potentially fertile farm lands that is little comprehended by the average citizen.

It is well known by a great majority of those who have enjoyed the benefits of the public schools that the rivers flowing into the Gulf of Mexico have carried with them, at the flood seasons, vast quantities of the fertile soils of the rich farming sections farther north which, by the ravages of high water, have become dislodged only to be spread upon deltas to be found at the outlet of these rivers or carried with greater impetus to mix with the waters of the Gulf itself. This provides an element of fertility with

which all are familiar, and the systematic attempts to reclaim the low-lying deltas by ditches and by pumping the surface waters can readily be appreciated as a rational measure.

In Florida this reclamation program carries with it elements of still greater interest. The Peninsula of Florida has for unnumbered centuries been the resting place for a vast number of aquatic birds, continually passing to and from the West Indies. The soils of Florida, therefore, not only possess the normal constituents of fertility due to the decomposition of vegetable matter, but have been vastly enriched by the guano deposits resulting from the migration of these tropical and semi-tropical birds.

In Florida, as in other sections along the Gulf, it is necessary in some instances to find an outlet for the excess water. This is being accomplished on a large scale, especially in the vicinity of Tampa and St. Petersburg, by means of a system of ditches which is designed to carry off all the surplus water, a process which promptly results in rendering these rich soils thoroughly adaptable for the raising of fruits and vegetables.

The Iowa farmer, with great complacency, asserts that his soil of vegetable loam is 12 feet deep. The Floridian can, however, with greater complacency, thank the birds for the enormous fertility of his landed possessions.

A factor of far-reaching importance in the reclamation of these lands is the possibility of shipping produce by water at moderate freight rates. The



Drainage Canal No. 1. This Shows One of the Five Crews of Men Employed on the Drainage Works.



Drainage Canal No. 1. Showing Scrapers at Work.

Western farmer, under present conditions, can look forward with considerable uneasiness to the prospect of an inevitable advance in the cost of transporting his products to the Eastern markets. He is dependent upon the railroads, and in the freight schedules, owing to the "gentlemen's" agreement, there is practically no competition.

This inland freight situation has a decided influence in producing the present trend of emigration toward the undeveloped enormously fertile regions along the Gulf of Mexico.

The tramp steamship on its way North is always ready to pick up crates of fruits and vegetables designed for the Northern markets, and as this traffic increases the steamship facilities are likely to increase in proportion. In this way, with the enormous consuming capacity of the chain of cities extending from the Chesapeake to the Bay of Fundy, there seems to be little prospect that the army of small farmers now settling like a cloud of locusts upon the fruit and vegetable

lands of Florida will be confronted in the present generation by the two formidable barriers so frequently encountered by the Northern and Western farmers—overproduction and prohibitive freight rates.

The history of the pioneer movements in the greater part of the United States is a story of privation, isolation and lack of social and school privileges. These drawbacks do not figure in the sections now being developed along the Gulf. The combination of a high grade of

agriculture and a steady increase in the number of pleasure seekers during the winter months exorcises the terrors of loneliness from the minds of those who have once surveyed this developing country.

Years ago a book, with the suggestive title, "Went to Kansas," was written by an alleged survivor of one of the most doleful family experiments now on record. The effect of the narrative was very depressing. The reports of those who make a tour of investigation to Florida are about as startling by con-



Drainage Canal No. 1. Showing One of the Deep Cuts.

trast as the limits of the English language will permit.

Booming the Vital Statistics

The city of Wilmington, Delaware, has long enjoyed the collateral reputation of being an annex to the Du Pont Powder Works. This is in itself sufficient to rivet the attention of a militant and more or less military world upon the city of Wilmington.

But while Wilmington as a subsidiary enterprise to the Du Pont Powder Works is laboriously endeavoring to supply powder sufficient to remove from earthly existence a considerable proportion of the world's population, it is in a measure counterbalancing these potential possibilities by carrying on one of the most thriving matrimonial enterprises to be found in the United States. Wilmington is the Gretna Green of Philadelphia. Owing to too much prosperity, the overproduction of rice and other causes, it has become a pretty serious affair for a young couple in Philadelphia to get married. The kindly interest of their friends, while a delightful asset within certain limits, becomes an embarrassment of riches beyond these limits. Consequently, the shy and modest bride, and the oft-times much shyer bridegroom gladly wend their way to the bellicose powder metropolis of the world on the peaceful errand of getting married early to avoid the rush of enthusiastic friends.

It is well known that the average clergyman receives but a small financial return for the many years of preparation for a pastorate. In the average city the clergyman has little prospect of becoming a plutocrat, but in Wilmington the office of officiating clergyman possesses great financial possibilities.

In fact, the matrimonial industry of Wilmington has reached such enormous proportions that as a bi-product the Mayor of Wilmington was able to perform 155 marriages in eleven months, according to recent statistics. Presuming that most any shy young bride and even shyer bridegroom would vastly prefer to be married by a meek and unassuming clergyman rather than to approach the satraps plentifully distributed about the average Mayor, some conception can be formed as to the extent of the matrimonial business now being carried on under the shadow of the powder works.

Too Much Young Meat Used

One result of the present high retail price of meat is the readiness of dealers to accept almost anything that is meat, in consequence of which many immature animals are now slaughtered and placed on the market.

Pigs are now slaughtered at about half the usual size; while the demand for veal has been so great as to cause a large production of this kind of meat which can be quickly placed on the market.

It is an open question whether the public interests are served by so extensive a use of veal. The nutritive qualities in this kind of meat are notoriously lacking.

As physicians are not likely to recommend veal as an important part of the dietary, they might perhaps go still further and discourage the use of it for strictly economical reasons.

It would be a very great advantage to the country at large if the use of young veal could be absolutely prohibited.

A calf at four weeks old becomes

marketable according to the butcher code and a ruling of the different health boards, but every physician knows that a four weeks' old calf is not to be compared for food values with the more mature animals.

Ethics That Are Rather Mixed

The ethical code which prevails among the small boys of a public school has often occasioned much amusement to their elders, but the code which prevails among the elders often assumes forms as difficult to comprehend.

A physician is liable to a fine in a large proportion of the United States if he fails to report a contagious disease to the health authorities. This statement, however, is subject to explanation; the disease reported must be of the kind which can be talked about in refined society. When the disease brought to his attention is venereal in its nature, and ten times more deadly to the general public, the doctor's lips are silent, no matter what may be the consequence to the innocent.

The very corner-stone of business ethics is to the effect that a man's employes shall be loyal to his interests and shall not betray his business plans to his competitors. This view is undoubtedly sound. According to the standard of the Hon. Elihu Root this also implies that the seal of secrecy is placed upon even a knowledge of designs detrimental to the public welfare. When Stenographer Kerby divulged certain correspondence to the Ballinger committee he was severely censured by Mr. Root, a member of the committee appointed for the purpose of making an investigation in which the interests of the public were supposed to be involved

to a vast extent. Apparently it was the duty of the members of the committee of investigation to ask for information, but to be very careful that it was secured according to the business code.

The ethics of society rule that while it is a heinous crime to rob a henroost and bad form to steal handkerchiefs in a department store, it is entirely consistent with the highest degree of culture to evade the payment of customs duties on merchandise of foreign manufacture.

It demands a liberal education indeed to enable a person to strictly conform to the conventional requirements of modern ethics.

Well-known Doctors as Sleuths

Dr. Chas. L. Dana, of New York, and another well-known New Yorker, Dr. Frederick Peterson, have been investigating the so-called spiritualistic phenomena of Eusapia Paladino, the Italian medium, who has been receiving the benefit of a great deal of free advertising by some of the magazines.

In one prominent monthly she was written up as having apparently solved the problem of getting into communication with the spirit world, a large amount of evidence being produced in view of that supposition, but Drs. Dana and Peterson, associated with prominent professors of Columbia, Princeton and Johns Hopkins Universities, have, after much investigation, decided that all the spirit rappings and other wonders that have been ascribed to spiritualistic "control" are explainable through perfectly natural manipulation of the hands and feet of the so-called medium.

The description of the way these discoveries were made is interesting. "The sitters and the bystanders drew up to

the table, leaning eagerly toward the instrument (electroscope). This hid the door from which the two creeping devotees of science, clad in close-fitting jersey gymnasium costumes and ready for their act of self-humiliation, came noiselessly across the floor and lay at full length under the chairs, their respective faces close to her right and left foot. Eusapia suspected nothing. Neither the spirits nor her 'psychic sense' apprised her of the keen-eyed skepticism ambushed at her feet. She testified more than once afterward that that evening had been a good one, the 'influence' favorable."

The explanations of the "psychic" wonders, a description of which, as before stated, has provided entertainment for the readers of a well-known magazine, are declared by Professor Dickinson, Columbia University, to be the result of a little more than average dexterity in the manipulation of the hands and feet of the medium.

The evidence of manipulation of purely physical nature was so plain as to naturally throw doubt upon everything that transpired.

The statement signed by the committee of investigation concludes as follows:

"Though the investigation may fairly be called patient and laborious, no convincing evidence whatever of such a phenomenon could be obtained. Many indications were obtained, however, that trickery was being practised on the sitters. These indications will be more fully stated by the individual investigators.

"So far as these sittings afford data for judgment, the conclusion of the undersigned is unfavorable to the view that any supernatural power in this case exists."

Every Doctor Has Some Political Influence

When a business condition has become an actual national disgrace and has continued to be such for years, it is time that some practical steps be taken for its alleviation.

There has been a well-grounded prejudice against the conferring of further privileges upon the capitalistic class, but it seems that, as is usually the case, too much conservatism has a depressing effect upon all classes.

It may be necessary to grant ship subsidies that will bestow undeserved benefits upon the few in order that the many may not be defrauded. The following inscription on a card having a wide circulation in business circles is significant:

FROM CONSULAR REPORT.

"To-day the harbor of Singapore is crowded with ships and steamers from all countries of the earth except the United States. The total number of vessels entered here in 1908 was 29,234, with a tonnage of 15,507,102. Of this number one small craft of 662 tons, flying the Stars and Stripes, came in with ballast and was sold to the highest bidder."

Will you assist in finding a remedy?

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Original Articles

THE TREATMENT OF LEUKAEMIA BY THE ROENTGEN RAY.*

By REYNOLD WEBB WILCOX, M.D., LL.D.,

Formerly Professor of Medicine at the New York Post-Graduate Medical
School and Hospital; Consulting Physician to St. Mark's Hospital,

NEW YORK.

THE following instance of this disease is presented because of the difference in type based on clinical as distinguished from purely laboratory conclusions, the considerable period of observation, and the fairly constant therapeutic results which it illustrates.

The patient is a medical student, Russian, 29 years old. His father died at the age of 43 from meningitis. His mother, now 55 years old, suffered from pain beneath and in her heart, and from shortness of breath for about a year, some twenty-seven years ago. The diagnosis was enlargement of the spleen. For the past seventeen years she has suffered severely from rheumatism. His two sisters are alive and in good health.

In Russia the patient held a government position necessitating absolutely indoor work, with a lack of exercise. For ten years he had been pale, but the most noticeable symptom was shortness of breath, commencing eight years ago and lasting about two years. When he arrived in this country, in April, 1906, he considered that he was well. After a brief stay in Connecticut, where he did translating, he went to Kentucky, working for his uncle in an ice-house and meat market for two years. The work was hard, the hours were long, and he complained of cruel treatment. During this time he complained of constipation and fever, but no chills, and was treated by a physician with calomel and quinine, the town having a reputation for malaria. About June, 1908, he felt pain below the shoulder-blade on the left side, and noticed a return of the

* Read before the American Therapeutic Society, at Washington, D. C., May 5, 1910.

short breathing; these symptoms disappeared after three weeks. From September, 1908, to June, 1909, he studied medicine in Boston. In the latter month a physician informed him that he was suffering from open hæmorrhoids, which accounted for the occasional bloody stools of the past eight or ten years. In August, 1909, the pain in the side and short breathing returned and he felt weak and thirsty. On September 24, 1909, he came under my observation. His pallor of skin and mucous membranes was profound. His pulse was 122, compressible, regular and weak. The heart boundaries and sounds were normal; Jaccoud's sign was absent. There was a marked *bruit de diable*. His respiration was 26, shallow, but without signs of dyspnœa. The liver extended to about two fingers' breadth below the free border of the ribs. The spleen occupied the whole of the left abdominal cavity, resting upon the pubes; on the right two fingers' breadth to the right of the umbilicus. It was hard, not sensitive to pressure and laterally slightly movable; the hilum was easily felt. There was no tenderness over the flat bones. No enlarged glands were felt. Although the patient appeared anasarcaous, there was nowhere pitting on pressure. Nothing of note was found in the urine.

The following is the record of blood-counts, including the differential leucocyte percentage:—

DATE.	HÆMOGLOBIN PERCENTAGE.	ERYTHROCYTES.	LEUCOCYTES.	LYMPHOCYTES.	POLYNUCLEARS.	MYELOCYTES.	EOSINOPHILES.	REMARKS.
1909								
Sept. 24	62	3,200,000	500,000			50		Reported by patient from memory.
Sept. 27	72	4,000,000	212,000	17	40	41		Poikilocytosis quite marked; no malaria.
Oct. 12	72	400,000	117,000	21	24	17		Poikilocytosis not so marked.
Oct. 19	80	3,400,000	160,000	12	20	10	9	All blood-cells show granular degeneration.
Oct. 27	76	3,600,000	190,000	28	18	9	11	Granular degeneration not so marked.
Dec. 1	74	4,000,000	160,000	28	16	6		Poikilocytosis not so marked.
1910								
Jan. 12	78	4,100,000	150,000	22	10			Slight poikilocytosis.
Feb. 22	75	4,300,000	160,000	15	10			No granular degeneration.
Mar. 10	92	5,400,000	150,000	14	7.3		1.3	
Apr. 29	98	5,200,000	71,000	6	8	9	3	Very slight poikilocytosis.

These blood-counts have been made by eight different microscopists, and in a general way those made on the same day agree with each other. It is regretted that one observer could not have carried on the investigation, in order that the personal equation might have been eliminated and the results have been more comparative.

The urine never showed the excess of uric acid usually so characteristic of the disease. Nor, indeed, during the treatment by the Roentgen ray was there observed an excess of phosphates from diminution of leucocytosis, such as has been constant in all my other cases of leukæmia.

The treatment was primarily empirical, based on the use of the Roentgen

ray, and was carried out under the direction of Professor Carl Beck, at first by him personally, and later by Doctor Eric Beck. A hard tube was used, fifteen minutes' exposure over the spleen, twice or thrice weekly. The care with which this was carried out is shown in that no untoward symptoms resulted until March 14, 1910, when a slight erythema appeared and lasted for ten days. The exposures were omitted altogether until the 27th, then directed upon the back until April 2d, and afterward continued as before. Iron was administered during the last two weeks in October and the first in November. At other times arsenic in gradually increasing doses, in the official liquor potassii arsenitis, was given until gastric symptoms supervened; at these times it was omitted for a week, to be commenced in the minimal dose. As the administration of some of the newer forms of arsenic has yielded rather irregular results in my hands, it was deemed best not to employ them. There seemed also to be a causal relation between the amount of arsenic and the quantity of blood passed by the bowel. Either stopping the arsenic would diminish the amount, but not check it entirely, or the administration of thirty grains of calcium chloride or citrate in two ounces of water at bedtime would cause the hæmorrhage to cease—generally two doses would be sufficient. The frequency of ulcerations produced by lymphatic hyperplasia of the intestinal wall suggests caution in the use of arsenic.

In making a diagnosis between the recognized forms of leukæmia, (1) splenomedullary, (2) lymphatic, and (3) the mixed forms, there is much confusion in the literature, but, clinically, the picture is fairly clear. In this instance, the massive enlargement of the spleen, taken in connection with the absence of tenderness over any of the bones, and of any enlargement of the lymphatic glands, would indicate that this particular leukæmia was of the splenic type, or possibly of the splenomedullary (sometimes designated *myelogenous*) form. The differential leucocyte count would seem to indicate the latter. A hyperplasia may originate in any hæmapoietic tissue, spleen, bone, lymphatic glands or other site of lymphatic tissue, but generally one type predominates, especially in the more acute forms. In the slowly progressive types, there is more difficulty in determining where the disease originated. The more one studies the patients, the more he is inclined to believe that the disease is seldom strictly confined to one organ or set of organs; nor, on the other hand, is it ever as generalized as one might expect.

On April 28, 1910, the lower border of the spleen was but two finger-breadths below the free border of the ribs; its consistence was hard, owing, doubtless, to the hypertrophy of the connective tissue during the long period of its enlargement. The pulse was seventy-two, of good volume and tension. The respiration was twenty-two, without signs of dyspnoea. The pallor had largely disappeared, and for the preceding two weeks the patient had engaged in active employment.

What the final results of the Roentgen ray treatment will be, no one at present can state definitely. Six years of observation have led me to believe that in this type of leukemia, essentially splenic, reduction of the leucocytosis, betterment of the anæmia, improvement of the general health, is more rapidly

and surely brought about by the skillful employment of the Roentgen ray than by any means which we had hitherto possessed. It is also believed that both iron and arsenic have still a place in the therapy of this disease. Under this treatment remissions are constant and intermissions generally pronounced. Relapses do occur, but they are more or less, generally more than less, amenable to the same treatment.

679 Madison Avenue, May 1, 1910.

DISCUSSION.

Dr. Robert T. Morris, New York, said that within two years he had had three cases of myelogenous leukæmia under observation extending over considerable periods. All three had distinctly improved under X-ray treatment. In one of the cases the diagnosis of sarcoma of the spleen had been made. The disease was far advanced, and the patient was weak, emaciated and failing rapidly. Apparently she had not long to live. She was given the X-ray treatment, and her condition progressively improved. She is now able to go out riding in an automobile, whereas at the beginning of treatment she could hardly turn over in bed.

Dr. Wilcox said he had reported the case because the patient had been under treatment for so many months. His experience had been that there is usually an early improvement, and then the patient passes from observation. He had watched this man, however, since September, and the blood-counts and other observations had been very carefully made. He hoped that other clinicians might have the same fortunate result in the treatment of this disease by the Roentgen ray. He would like to have an opportunity to observe one of these patients for years, instead of months, so that he might ascertain what the end results really are.

FURTHER STUDY OF DIABETES AS AN INFECTIOUS DISEASE.*

By ALFRED KING, M.D.,

PORTLAND, ME.

ONE year ago, at the meeting of the American Therapeutic Association held at New Haven, Conn., I ventured to express publicly the opinion that diabetes mellitus is an infectious disease, due to the presence in the blood of the yeast fungus, *saccharomyces cerevisia*. In support of this theory were presented the facts that this fungus is found in all diabetic urine; that I had obtained a pure culture of it from the blood of every case I had been able at that time to examine, sixteen in number; that the opsonic index or resisting power of each patient varied with the physical condition from .46 to above 1, or normal; that by the use of a vaccine this opsonic index was increased and all symptoms of diabetes relieved, and, also, that pathology confirmed the theory and showed nothing to oppose it. The only link which seemed wanting to the absolute establishment of the theory was the fact that I had not produced the disease in the lower animals by injecting the fungus; yet, even on this point, I was able to present the experiments of Leo, who had succeeded in producing glycosuria in dogs by

* Read at the Eleventh Annual Meeting of the American Therapeutic Society, held in Washington, D. C., May 5, 6 and 7, 1910.

the administration of fermented diabetic urine which contained no glucose. One year more has passed, and though I have not yet had the opportunity, in a somewhat busy life, to experiment on lower animals or complete my investigations, yet with considerable additional experience I have found nothing to disturb my confidence in the theory or my faith that it will be established.

The theory is based on the facts that this fungus exists in enormous quantities in the blood, and that it forms certain soluble ferments or enzymes, as invertase and sucrase, which by a catalytic action on those sugars taken in food or produced in the processes of digestion, and also on glycogen, convert them into glucose. This action takes place mainly in the portal blood and liver, and the glucose, formed much more rapidly than normal, enters the general circulation, increases the natural content above .2 per cent., and appears in the urine. It is practically the same as taking glucose by the mouth, as it is absorbed quickly and in quantity without the delay of any digestive process. The excessive quantity in the blood is naturally eliminated by the kidneys.

My work during the last year has been along lines similar to those reported a year ago. I have now examined forty patients, and have obtained a pure culture of the fungus from a drop of the blood of every one with one exception. This was in the case of a little boy three years of age, of a very nervous temperament. The attempt to sterilize and prick the finger was accompanied by such nervous disturbance and resistance on the part of the little fellow that it seemed wiser to desist. It was not worth while to obtain it by giving an anæsthetic. The fungus was present in his urine. In testing the urine for glucose I have used freshly prepared Fehling's solution. In determining the percentage I have used Purdy's solution.¹ If the drops of urine are added immediately to the solution on boiling, the result is fairly accurate. If the solution is boiled very long the result will vary with the escape of the ammonia. After $\frac{1}{8}$ per cent. is reached there is no certainty of result, as the same number of drops of normal urine will decolorize the solution. For acetone I have used Lange's method.² For diacetic acid I have used Gerhardt's test. One or more drops

¹ Purdy's solution for determining the percentage of sugar is made as follows:

4.752 grammes of copper sulphate,
23.5 grammes potassium hydroxide,
350 c.c. ammonia, U. S. P.,
38 c.c. glycerin,
Water up to 1000 c.c.

Dissolve the copper and glycerin in 200 c.c. of water; dissolve the potassium hydroxide in 200 c.c. of water; mix these two solutions, and add the ammonia and then water to bring the total to 1000 c.c.

Bring 9 c.c. of the solution to boiling and add suspected urine one drop at a time. If one drop decolorizes the solution it shows ten per cent. sugar; if two drops decolorize, five per cent., etc. Urine showing more than one per cent. sugar should be diluted with water a known number of times—four, for example—and then tested as above; multiplying the result by the number of times the urine was diluted.

² Lange's test for acetone: To 10 c.c. of urine add two or three drops of glacial acetic acid; shake and add a few drops of a solution of sodium nitroprussiate; mix and overlay with 2 c.c. of concentrated ammonium hydroxide. If acetone is present a purplish-red ring will appear at the point of contact within a few minutes.

of the solution of perchloride of iron, added to the urine containing diacetic acid, produce a color varying from light garnet to nearly black. For testing for β -oxybutyric acid I have used the method of T. Stuart Hart,³ which depends on the removal of the acetone and diacetic acid by boiling the urine and then forming acetone by oxidizing the β -oxybutyric acid with hydrogen peroxide. The reappearance of the acetone is determined by Lange's test.

At first I treated diabetic patients in my office, but soon found that it was impossible to keep run of the diet, the amount of fluid taken, or the quantity of urine passed; so that accurate observations as to the results of treatment could not be obtained. As my purpose has been to study the disease and the effects of treatment, I have for some time refused to treat any case unless the patient would go to a private hospital and be completely under my care for at least a month. In treating an infectious disease I believe that the whole physical condition of the patient should be considered; also the methods of treatment found beneficial in the past, even though greater knowledge be necessary to explain their value. To disdain former methods of treatment, "the good the past has had," and depend merely on rest, fresh air and diet is narrow, unscientific and unprogressive. The treatment of diabetes must be hygienic and medicinal. It must aim at removing and controlling the cause, as well as the injurious effects. Every effort made by nature to maintain the health of the body and overcome and protect the system from infectious germs and their effects should be assisted. Nature's efforts are frequently made known by the actual cravings of the patient, and should receive attention. One of the cravings of a diabetic is thirst. I believe it should be satisfied. The taking of fluids dilutes the glucose, acetone, diacetic acid, and β -oxybutyric acid in the blood, relieves their irritating effects upon the vessel-walls and tissues, and facilitates their removal, as well as that of the germs from the blood. To blunt this sense of thirst by acids, opiates or other drugs, and to fail to satisfy it, will sooner or later do injury.

To regulate the diet of a diabetic is a most important part of scientific treatment and calls for much study and care. As sugars commonly taken in

³ Dr. T. Stuart Hart's method for testing for β -oxybutyric acid: To 20 c.c. of the suspected urine add 20 c.c. of water and a few drops of acetic acid, and boil until the volume is reduced to about 10 c.c. To this residue add water to the original volume (i.e., until it measures 20 c.c.); put this into two test-tubes (B and C) of equal size, 10 c.c. in each test-tube; to one of the test-tubes (C) add 1 c.c. of hydrogen peroxide, warm gently for about one minute (do not boil), and then allow the fluid to cool. Add to each test-tube (B and C) one-half of 1 c.c. of glacial acetic acid and a few drops of a freshly prepared watery solution of sodium nitroprussiate and mix; overlay the solution in each test-tube with 2 c.c. of concentrated ammonium hydroxide; allow these to stand for four or five hours, and at the end of this time compare the two test-tubes. At the point of contact between the ammonia and the underlying fluid B will show no ring (or a faint brown ring if much creatinin is present); test-tube C, to which hydrogen peroxide was added, will show a purplish-red contact ring if β -oxybutyric acid was originally present; if β -oxybutyric acid was not present, the two test-tubes will not differ in appearance. If the two test-tubes are now shaken, the difference in color will be seen throughout the fluid; this difference is intensified by allowing the tubes to stand for fifteen or twenty minutes after shaking.

foods are speedily converted into glucose without the aid of any of the digestive processes except the invertin of the intestinal mucosa, as their omission can be supplied in another and better way, and as the little sweetening needed can easily be supplied by saccharin, I believe it is better to forbid any use of the sugars except what may be in a little cream or milk. Even milk should be limited to a small amount. It is true that large quantities of milk have been used with apparent benefit in some cases. A milk diet alone has been used with good results, but it contains 4.6 per cent. of sugar of milk, which is converted into glucose and galactose by the invertase, and while some of this may be consumed in the system, yet it is much more than the normal content of the blood. I have found it to increase the glycosuria. Again, casein is easily changed to glycogen, and cream may promote the formation of fatty acids. It is a fact that sugars aggravate the glycosuria and may promote the formation of the invertase. The digestive organs are of vast importance to a healthy body, aside from the secretion of digestive fluids. A diet composed of the end products of digestion would certainly be repulsive and, given alone, would lead to serious organic disturbances. The digestion of starchy foods is gradual and slow, and varies with the variety of food, and there is a slow introduction into the portal circulation of the maltose or glucose formed. Starchy foods promote the functional activity of the digestive organs and there is a craving for them, especially for bread, in the diabetic. I believe this demand of nature should be granted with limitations. It is known that the omission of all carbohydrates is followed in healthy persons by the appearance in the urine of acetone and diacetic acid and by an acidosis. It is also known that when these substances appear in a diabetic's urine the sudden withdrawal of all carbohydrates may be followed by a serious change, possibly a fatal termination. Glucose is less injurious than the acidosis. Three ounces of starches per day prevent the acetone and diacetic acid. I believe in limiting the starchy foods in diabetics to not less than three ounces per day and in satisfying the craving of the patient so far as possible. I believe that blunting this desire by drugs is injurious, and to try to gratify the taste with an imitation food containing no starch is a senseless piece of deception unworthy of an intelligent physician. It seems like a revival of green glasses for horses to make them eat shavings. I do not believe in gluten foods. They do not satisfy, and they contain more or less starch, which can be given in a more palatable form and in equal quantity with less harm. Gluten foods are injurious. In one case the opsonic index of a patient living on gluten bread dropped from above normal to .46. Again, the limitation or omission of carbohydrate foods, which provide heat and energy, leads to loss of health, strength and weight. Such losses are too serious to be permitted. It is remarkable what abusive treatment some patients will stand, nor is it to be wondered at that many diabetics to-day, having escaped from the hands of well-meaning physicians, have found their health much improved by eating what they like. An unbalanced ration is unsatisfactory and injurious to man, as well as animals. I cannot agree with those who stop at once all carbohydrates on beginning treatment. Mild cases do not require it. In severe cases it is dangerous. Limiting patients to 1 ounce three times a day is sufficient for all practical purposes. The advisability

of giving smaller quantities at shorter intervals is a matter for investigation. When this quantity is followed by much glycosuria it is well to reduce gradually the amount of proteids and watch the effect. So also in acidosis it is well to omit the fats likely to form the fatty acids. Of the carbohydrates I have used white bread, cornmeal, oatmeal, potatoes, beans, peas, nuts and bananas. The only sugar used is in a small portion of milk or cream.

In regard to drugs, I believe tonics like iron, arsenic, strychnine, quinine and hypophosphites, especially those invigorating the nervous system, are exceedingly valuable for relieving the existing weakness. Such laxatives as cascara, castor-oil, calomel and soda may be required. For acidosis, sodium bicarbonate should be given in half-dram doses every two, three or four hours. Antiseptics to retard the action and growth or to destroy the fungus have been found of no use. Creosote carbonate, one of the most effective in destroying the life of the fungus, carefully given in large doses, was tried on several cases, even to smoky urine, but produced no effect. There is no antiseptic which can act solely upon germs when in the tissues of the body; they must be combated by assisting natural efforts for immunization. The vaccine treatment stands alone as most effective. It restores the strength and sense of well-being, relieves the thirst, checks the polyuria, reduces the sugar content of the urine, and lessens the frequency of micturition. All this it does by increasing the resisting power and destroying the cause. The preparation of the vaccine and the method of administration have been changed from time to time. One year ago two patients on uncontrolled diet were having 6 to 8 per cent. of sugar in their urine. A vaccine made of fungus originally obtained from urine heated to 60° C. for an hour was used. This made them feel better and stronger, lessened the frequency of micturition, and reduced the glucose to 5 per cent. Less than this it would not go. A vaccine from the fungus obtained from blood was used with a slightly better effect. Then five plate cultures were made, from fungus obtained from the blood of five different patients, to observe the comparative rapidity of growth. All varied, but some were much more rapid-growing than others. A vaccine was made from the most active-growing. The percentage in both cases now dropped to 2 per cent., where it remained for some time. Later the use of a sealed glass tube in sterilizing the vaccine showed it to be more effective, and the urine now contains from 1 to $\frac{10}{13}$ per cent. of sugar. These patients are not on a very restricted diet. The sterilizing of the vaccine requires temperature and length of time, varying with the age of the fungus. The higher the temperature and the longer the duration of exposure for making the vaccine, the less effective is the vaccine. The frequency of treatment is of importance. Twice a week soon brings the opsonic index above normal, but it is more effective than that. On watching the cases at the hospital it is not uncommon to have two cases running almost parallel. I have noticed that on the day following the use of the vaccine the quantity of urine would drop off from 4 to 20 ounces, and then come up again the following day. This change is more noticeable when the daily quantity is about 100 ounces. When the quantity is normal or below, there is slight if any variation, though I have seen it increase to normal. On

changing to daily administration, I have seen two cases drop off 40 ounces in two days.

In reporting cases of diabetes it is difficult to classify them. We see mild and severe cases. We look with anxiety upon cases in young children, and even in young men and women, and we fear those having acetone, diacetic acid, and β -oxybutyric acid. We do not like to see the young with emaciation and the hectic flush. Yet these are not of the same class, for their condition may be caused by the omission of the carbohydrates, improper diet, acidosis, or tuberculosis or other wasting diseases. We have every reason to be encouraged when, with other improving symptoms, we find an improvement in color, flesh and strength.

Of the forty cases seen since I began my investigations, ten were simply examined. Two have died, both in the early months of my work. One was a little boy, and the case seemed a mild one. The fond father was a physician, and I have thought that the anxiety of the parent over the glycosuria led to such restrictions of diet that the resulting acidosis occasioned the fatal termination.

The other death came with coma. The patient was a young woman with intense acidosis. There was profound anæmia, shortness of breath, loss of strength and flesh. I think change of diet had to do with her death, and had it been possible for her to have the care, diet and treatment to be obtained now in a hospital I believe the fatal termination would have been warded off. Twelve patients received office treatment only. Two of these I saw so few times as to be able to make no observations worthy of note. One lived in the country and has improved very much, but it was difficult to provide proteids as she was situated, and in this way the treatment was unsatisfactory. Four were mild cases. On vaccine treatment with a satisfying diet, and much more than 3 ounces of carbohydrates per day, they are conscious of no disease, are greatly improved in health. Their urine at times shows no sugar, at others a small fraction of 1 per cent.— $\frac{1}{3}$ to $\frac{1}{8}$. One case, more severe, is greatly improved. He has but $\frac{1}{2}$ per cent. of sugar, with no consciousness of disease. One case improves greatly under treatment, but when she begins to feel as well as ever she disappears to follow her own sweet will. Two of the most severe and chronic cases I have already referred to in connection with the preparation of the vaccine. With but little restriction of diet their health has improved very much during the past year, and, instead of 6 to 8 per cent. of sugar, they now have but 1 per cent., or a little under. The last of these office cases I will speak of later as one in which the treatment was begun early in the disease.

Hospital cases do much better than office patients. The mild cases show greater improvement in general health, can use a diet apparently unrestricted, and soon have less than $\frac{1}{8}$ per cent. of sugar, or none at all. In cases of greater severity some results have been equally good. One case was treated at her home in the country. She was 56 years of age. One sister had died of diabetes at the age of 65, after an illness of nine years. There was no reason to suspect contagion in these two cases, as they lived far apart and did not see each other for thirty years, but each then had the disease. This patient had most decided reactions on the use of the vaccine. She, in fact, is the only patient who has

shown any marked reaction. Its use the first time was followed by chill, fever and delirium that night. The dose had to be reduced, and the vaccine was made from a culture of her own blood. The first treatment stopped the polyuria and greatly reduced the percentage of sugar. She improved for a while, but as she lived in the country she could not get proper food. She developed an acidosis and began to lose flesh and strength, and the hectic flush appeared in her cheeks. She came to my hospital for treatment. Here the regular vaccine was used, but the quantity had to be reduced to one-half what the other patients were taking. On March 19th her urine contained 2 per cent. sugar and had a specific gravity of 1040, and acetone and diacetic acid, marked. Seven days later the specific gravity was 1030; sugar, $\frac{1}{2}$ per cent. Five days later the specific gravity was 1018 and there was no sugar, though a trace of acetone and diacetic acid. No sugar was found during the remaining five days of her stay in the hospital, but there was still a trace of the acetone and diacetic acid. The quantity of urine was small, being only a little over 2 pints in twenty-four hours. While under this treatment she gained flesh, strength and a natural color and felt perfectly well. Another case was treated outside the hospital for a time with marked benefit. She became ill with a severe bronchitis, and her physician gave her cough mixtures with syrup. She recovered from this with great loss of health and I advised a month at the hospital. When I first saw her she was passing $9\frac{1}{2}$ pints of water per day; sugar, 3 per cent.; specific gravity, 1035. The sugar was reduced by treatment to 1 per cent., with total quantity of urine also greatly reduced, and no consciousness of trouble. On entering the hospital, March 9, 1910, the daily quantity was 34 ounces; specific gravity, 1012; sugar, $\frac{2}{9}$ per cent. On March 12th there was but $\frac{1}{6}$ per cent. of sugar, on March 26th it had wholly disappeared, and none was found during the remainder of her stay at the hospital. She also gained flesh and strength and felt perfectly well.

I have had at my hospital four young people about the age of twenty. On entering they were passing daily over 100 ounces of urine, which contained sugar, acetone, diacetic acid, and β -oxybutyric acid. These to my mind are serious cases. Under the use of vaccine they feel stronger and better and the sugar decreases, as also the other products mentioned. The day following the use of the vaccine there is usually a drop in quantity of from 4 to 20 ounces of urine. As I have said before, on observing this and changing to a daily use of the vaccine, in two cases the total quantity was reduced 40 ounces in forty-eight hours. These cases require at least six weeks' treatment to get the total quantity to remain below 4 pints and a duration of hospital treatment of several months to get best results. I have had in the hospital one little boy of three. He had been sick several weeks with loss of flesh, color and strength. His urine contained 1 per cent. of sugar, acetone and diacetic acid. Micturition was hourly. He remained at the hospital a month. Sugar was then $\frac{1}{2}$ per cent.; acetone and diacetic acid, a trace of each; micturition normal. He was able to sleep all night and greatly improved in flesh, strength and color; in fact, was apparently well. In spite of a satisfying carbohydrate diet, he was passing but a dram of glucose in twenty-four hours. His condition to-day, after four months of treatment, three of which were at his home, is about the same, only there is no acetone or

diacetic acid in his urine. He plays with other children and is apparently as well as any of them.

Cases of diabetes taken early give the quickest and best results. One case in point is a man aged 58. On September 1, 1909, his urine had specific gravity of 1045 and sugar $1\frac{1}{9}$ per cent. He had been conscious of trouble but a few weeks. Thirty minims of vaccine were given and the diet restricted as to carbohydrates to one slice of bread or one potato with each meal. A pure culture of the fungus was obtained from a drop of blood. His opsonic index was 1.14. September 4th the specific gravity was 1035; sugar, $1\frac{1}{9}$ per cent. September 10th the specific gravity was 1027; sugar, $1\frac{1}{17}$ per cent. The vaccine was given twice a week. On October 12th there was no sugar. Two attempts to get culture from blood were negative. He withdrew from treatment and I did not see him professionally until a week ago, an interval of some six months. He had been eating everything except sugar in coffee, going to dinners almost daily, had gained ten pounds, and was feeling as well as ever. His urine had been examined frequently without the finding of sugar. I found less than $\frac{1}{6}$ per cent. of sugar at one examination, and three days later, after the partaking of a fine dinner the night before, his urine contained no sugar. A culture from the blood showed the fungus still lurking in his system. Another case was that of a man of 45, who came to the hospital March 23, 1910. Fungus present in blood; specific gravity of urine, 1035; sugar, $\frac{5}{6}$ per cent. on restricted diet. He received vaccine every other day. On March 26th the sugar was $\frac{5}{13}$ per cent. On March 31st none was found; on April 4th $\frac{1}{4}$ per cent. sugar. For two weeks more none was found. Blood culture at end of that time was negative.

So I might report other cases showing the value of the vaccine treatment of diabetes. Those who see its effects now have no doubt as to its value. I am aware that much is still to be learned as to the preparation and use of vaccines for treatment of infectious diseases and in the study of immunization. I believe that Wright's work is epoch-making in the history of medicine. My own work on diabetes has given me increasing confidence in the truth of the theory and in securing still better results. The coming year offers still better opportunities for study. Mr. Drummond, who has been of great help to me in the work, graduates in medicine this summer and will be able to give still further assistance. This will enable me to work out some problems in regard to vaccine, to experiment on the lower animals, and to make still more careful observations. The work certainly seems more promising than a year ago, and I have great hope that it may prove of use in determining the cause and leading to a successful treatment of a somewhat obscure disease.

DISCUSSION.

Dr. N. P. Barnes, Washington, D. C., said he thought that the work of Dr. King deserved special recognition from the Society. He therefore moved that a vote of thanks be extended to the author for his interesting and instructive paper. This motion, duly seconded, was carried unanimously.

Dr. Howard Van Rensselaer, Albany, N. Y., said that the results reported by Dr. King were different in some ways from those obtained by other observers. Under suitable conditions the yeast fungus destroys sugar, with the formation of alcohol.

Now, if in diabetes there are present in the blood sugar and the yeast fungus, as suggested by Dr. King, he could not see why this action would not take place with the result that all of the sugar would eventually be used up and disappear from the blood, leaving the patient cured, though perhaps in a condition of chronic alcoholism. Thus the yeast fungus would be nature's cure, rather than the cause of the disease. He wondered whether Dr. King had not met with the same difficulty that he had encountered in the laboratory. He once found a germ in a place where it apparently did not belong, and he kept meeting it again and again in places where he least expected to find it. His suspicions were aroused, and he examined his stain and found that it contained great numbers of these germs.

Dr. Osborne said he had investigated three cases of diabetes in his laboratory, but had not been able to find the yeast fungus in the blood. Whether this was the result of faulty technique or not he did not know. He had been struck by the truth of Dr. King's observation that many diabetics do not begin to run down rapidly until they come under the physician's care. The only explanation which he could offer was that excessive dieting is responsible for this result. He believed that we are too much afraid of acidosis—not necessarily a diminution in the alkalinity of the blood, but the appearance of diacetic acid and acetone in the urine. According to his experience, this phenomenon does not always have the serious significance which is commonly attributed to it. In the course of strict dieting acidosis of a certain degree often occurred, and he frankly confessed that he had no liking for it; but he had found that in some cases if the dieting were kept up, and a certain point passed, the diacetic acid and acetone gradually diminished in the urine, and might ultimately disappear, even when the patient was on an absolutely starch-free diet. Since he had become convinced of this he felt safe in restricting the diet to a point which he formerly believed to be unjustifiable.

Dr. T. E. Satterthwaite, New York, asked Dr. King whether his proof involved cases in which the *saccharomyces* fungus, removed from the blood of patients suffering from diabetes and introduced into the blood of the lower animals, had produced in them glycosuria. This subject was certainly a very interesting one. The theory, if sound, seemed to point the way to the use of vaccines in the treatment of glycosuria; but this seemed almost too good to be true.

Dr. King, in closing, expressed his appreciation of the kindly feeling of the Society. In reply to Dr. Satterthwaite's question he said that this had been done by Leo. The experiments were mentioned in Osler's Practice. As stated in the paper, he had not had an opportunity to conduct experiments of this kind, but hoped to be able to do so during the coming year. In reply to Dr. Van Rensselaer he said that whether or not the yeast fungus would act in the blood as it does elsewhere was an open question. He was inclined to doubt whether it would act the same inside the body as without. He discussed the question further, and offered a suggestion as to the manner in which the presence of the yeast fungus in the blood might give rise to glycosuria. By preventing coagulation by drawing off the blood into saline solutions he had been able invariably to get the germs, in spite of every antiseptic precaution which he could employ. His stain was an ordinary methylene-blue solution, and if it had been contaminated in the way suggested by Dr. Van Rensselaer all other specimens stained with the solution would have contained the germs. This was not the case. He had yet to meet with a case of diabetes in which he was unable to find the yeast fungus in the patient's blood.

THE GROWTH OF THERAPEUTIC NIHILISM.

By FREDERIC S. MASON, B.Sc., Ph.G., M.D.,

NEW YORK CITY.

WHEN in Europe last year, it was somewhat of a surprise to me to find that loss of confidence in medication is gaining ground on the Continent as in America. In conversation with young physicians in France, Germany and Switzerland, this pessimism was painfully marked in contrast with the optimistic views entertained on surgery and pathology. The older practitioners do not seem to go outside the officinal and semi-officinal remedies consecrated by usage, and are perhaps better therapeutists because they have learned to appreciate some of these old drugs in their long career, while the younger members of the profession, with rare exceptions, regard almost every drug as a mere placebo. Mercury in syphilis, quinine in malaria, morphine and coal-tar derivatives for pain, are still used, it is true, but few others are recognized as of real value. This may be accounted for, in a measure, by the surfeit of new therapeutic agents which chemists have brought forward in recent years. Yet patients do not appreciate expectant treatment, and look to their medical adviser not only for a correct diagnosis, for lessons on hygiene, diet and the like, but also for relief of symptoms by medication.

As Sajous pointed out recently in one of his admirable communications, the non-progressive position of present-day therapeutics must be attributed largely to the want of a more thorough knowledge of the true action of drugs, few of which have been scientifically tested from a physiologic standpoint, although an immense number of unclassified observations exist; and until this knowledge is accurately defined and laws established, no real advance can be expected.

It is not disputed that therapeutics is encumbered with rank empiricism; many of the so-called "classical" remedies have no true scientific value, and the number of those recognized could with advantage be considerably reduced. Even the most rabid therapeutic nihilist, however, will not deny that certain drugs do modify physiologic functions, and would gladly use them if their employment were reduced to a positive science, i.e., if the accumulated facts had been classified and a reliable basis of scientific treatment could be established.

Now that physical diagnosis, X-ray pictures, laboratory examination of urine, stomach-contents, fæces, sputum, blood, etc., are recognized duties of the medical attendant, and that he is instructed in the methods of such examinations, he expects to find reliable data with regard to drugs and their uses. The study of therapeutics is so complicated that the average practitioner finds it impossible to attempt for himself the investigation of more than a very few drugs; hence he soon gets into a rut, and it is rare to find even a prominent man prescribing a varied list of officinal or unofficinal remedies. We see, then, how essential it is for the rehabilitation of therapeutics that specialists should

thoroughly revise by investigation the claims made for even our most important remedies.

In order to do this, a qualified body of independent workers should undertake to verify the reputed properties of the officinal and more modern non-officinal remedies. The services of chemists and pharmacists will also be necessary, but they will be less important than those of biologists, physiologists, pathologists and clinicians; for chemistry belongs to the most exact sciences, and our knowledge of the actual composition of drugs and the best methods of compounding them have made remarkable strides in comparison with that of drug action. Not only must experiments be made on normal human beings, but also on animals. Until now, the action of drugs has best been known in its application to pathologic subjects, but we should know also their influence on normal subjects, in order to verify their varied effects when the many factors inherent to disease are present.

In this connection we would urge that this body of investigators should look for other means of administering drugs than by the mouth, which of all methods is the most undesirable, and has only its facility to recommend it.

Many therapeutic agents are powerful enough to be modified by or to modify the gastrointestinal secretions and often injuriously affect the mucosa and interfere with secretion. Investigators might, therefore, among other means, consider the advantages of introducing small doses of active drugs through the skin, not only intramuscularly, or by subcutaneous injection, but by inunction. Great progress on these lines is possible, for the skin can be made to absorb therapeutic agents rapidly by new methods which might be brought to the attention of the profession. It is doubtful whether the Council of Pharmacy of the American Medical Association has the facilities to undertake such work, and while the Council has made a laudable attempt to purify the pharmaceutical atmosphere, the present campaign will appear childish in years to come, for it is a poor compliment to our modern colleges to believe that well-trained graduates will be likely to prescribe the unscientific preparations exposed in the *Journal of the American Medical Association*. Ardent therapeutists have perhaps been somewhat intimidated from fear of being accused of being influenced by manufacturing interests, so that hardly any physician of note would dare to publish favorable investigations concerning the exact physiologic action of a new drug. Progress on these lines, therefore, has hitherto come from Europe, more especially from Germany, where even the most eminent professors are not only willing but anxious to make such investigations.

The so-called "proprietary interests," however, certainly required restraint and the Council's work was necessary before anything else could be attempted. Optimism in every branch of medicine is in the ascendancy; I believe a reaction must surely come, that the old science of therapeutics will soon find earnest workers to take up investigations into the value of drugs in disease, and that finally more definite data will be obtained which will reinstate this now neglected branch of medicine in the prominent position which it once held.

ALCOHOL AS AN ACTIVE CAUSE OF INSANITY.*

By FRANK WOODBURY, M.D.,

Fellow of the College of Physicians of Philadelphia; Secretary to the Committee on Lunacy of the Board of Public Charities of Pennsylvania.

Nor much time need be spent in discussing whether or not the use of alcoholic drinks is an active cause of insanity. This is a question that will receive an affirmative answer, not only from alienists and physicians generally but also from all intelligent students of the effects of alcohol upon the human body.

Although known universally as an academic truth, as a matter of fact, the great importance of alcohol in the production of insanity is realized by comparatively few. Certainly it is not appreciated by the man in the street or there would be fewer saloons and other drinking places. It is with the hope of impressing such lessons upon the public that this meeting is held, and this also furnishes the excuse for this brief communication.

Pennsylvania is now supporting in thirty hospitals, in whole or in part, nearly 16,000 indigent insane, a very large proportion of whom owe their unfortunate condition directly or indirectly to the toxic effects of alcohol. If statistics are desired, we may quote the investigation into the causes of insanity of several thousand patients admitted into the Manhattan State Hospital, which, as recently reported by the Superintendent, Dr. Mabon, shows that about 33 per cent. of the cases of insanity are due directly to alcoholism, and if those are also counted in which alcoholism only acted indirectly the proportion would be increased to nearly 66 per cent. of the male patients.

I have but just returned, only a few days, in fact, from a visit to several institutions for the insane in the West Indies. While I was away, I inspected hospitals at Mazorra, near Havana; at San Juan, Porto Rico; at Kingston, Jamaica; at Port of Spain, Trinidad; at Bridgetown, Barbadoes; at Hamilton, Bermuda, and also at Ancon, in the Panama Canal Zone. In each institution, I made special inquiry into the causes of insanity, and especially with regard to alcohol as a factor. I found that in Spanish institutions, they were not disposed to consider this a prominent cause. The Spanish physicians reported that the natives were not addicted to the excessive use of alcoholic drinks, and evidently were not disposed to look unfavorably upon their use as a part of the daily diet to eke out scanty sustenance. In fact, in Cuba, a ration of grog is served to the patients in the hospital for the insane, once a day. Observation of the working population of the Island, however, I think warrants the statement that a large proportion of the community is quite obviously below the normal in mind as well as in body. In the Canal Zone itself alcoholic drinks are excluded, but I was informed that in the adjoining city of Panama the drinking of rum is very common among the lower classes, so that a large proportion of them is

* Read, by invitation, before the American Society for the Study of Alcohol and Other Drug Narcotics, at its semi-annual meeting held in Philadelphia, April 6, 1910.

constantly more or less under the influence of alcohol. By an arrangement between our Government and the Republic of Panama, the insane of that country are admitted into the United States Hospital at Ancon. In this hospital alcohol is recognized as the greatest active cause of insanity among the natives. Without discussing the other hospitals in detail, I may say that the general view of alienists was expressed by Dr. Harvey, of Bermuda Lunatic Hospital, who stated that "heredity occupies the first rank among the causes of insanity and alcohol comes next."

Just here, I would make the comment that inherited insanity and intemperance go hand in hand, and abuse of alcohol by the parents is generally acknowledged to be the most potent cause of imbecility and nervous instability, or the insane heredity, in the children. That this view is correct is warranted first by clinical experience, second by pathology, and physiologic experiment, and third by psychiatry, and especially recent investigations into the influence of the blood in causing insanity.

It may be profitable to discuss these heads briefly:—

First. Clinical experience abundantly demonstrates the action of alcohol in producing temporary impairment of the rational faculties. The patient under its effects shows rapid loss of his customary self-control, becomes hilarious, noisy, emotional, argumentative, silly, obstinate, and then stupid, or comatose, followed by a variable period of depression. In certain susceptible subjects such an experience may develop a latent insane tendency, and permanent insanity may result. *Mania a potu* and *delirium tremens* cases are instances of insanity while they last, and are included among the toxic insanities.

In addition to the acute cases we constantly observe cases of chronic alcoholism where the patient keeps his blood tinctured with alcohol for a considerable period of time. Such persons manifest obvious signs of constitutional impairment both of mind and body, and are really, in some degree, insane, and their disease may be of such character as to require their commitment to a hospital or other establishment where the insane are detained for care or treatment. In such cases hallucinations, imperative conceptions, instability of temper, delusions, and maniacal outbursts may occur and precocious dementia may terminate the intellectual life of the patient. Among the mental disturbances resulting from alcohol are confusional insanity, mania-like conditions, melancholias, persecutory phenomena simulating paranoia, obsessions, epilepsy, stupor, impulsive or automatic acts, and progressive mental deterioration. The lowering of the moral sense frequently leads to offenses against propriety or decency in victims of alcoholic brain disease. Clinical experience therefore shows that alcohol in its action on the brain is a poison, and this is further demonstrated by the teaching of morbid anatomy.

Second. The pathological effects produced by alcoholism may be summarized as a universal tendency to fibroid and fatty degeneration. While these changes are taking place throughout the entire body, they are most destructive in their effects in the great nerve centers. As they are fully described in all the text-books and are familiar to you, I will not attempt to review them in detail. Professor Berkley, of Johns Hopkins University, in his "Treatise on Mental

Diseases" (p. 247), summarizes its ultimate effects in the statement that "under the continual abuse of alcohol the whole organism suffers psychical and somatic degradation; which is not confined to the transgressors themselves. As a result of the excesses of the progenitors, there appears in the descendants lowered vitality, stunted growth, mental and moral imbecility, deaf-mutism, sterility, with the result that within a few generations the family becomes extinct, or consists of members physically and mentally incapable of holding their own in the great struggle for existence."

Third. Psychiatry shows that blood changes are responsible for a large proportion of cases of insanity. By restoring the blood to the normal condition such cases may be cured, provided that irremediable secondary pathological alterations of structures have not occurred. Alcoholic psychoses, therefore, are amenable to appropriate treatment up to the point where fibrosis and steatosis bar the way to recovery. In some cases this occurs early; in others, comparatively late. As regards the individuals possessing an underlying tendency to insanity, which is made active by alcohol, the prognosis is always uncertain. In such cases the drinking habit and periods of alcoholic excess themselves are evidences of mental impairment and are attributable to chronic alcoholic dementia.

In conclusion, I would say that this Association is engaged in a great philanthropic work in constantly impressing upon the public the true character of alcohol as a poisonous drug. There are encouraging evidences in every direction that the lesson is being learned,—that the spirit of wine is an evil spirit, which has been well characterized by Shakespeare as a thief which men put into their mouths to "steal away their brains."

ALCOHOL IN THERAPEUTICS.*

By CHARLES E. DE M. SAJOUS, M.D., LL.D.,

Professor of Therapeutics and Pharmacology in Temple University,

PHILADELPHIA.

WHEN invited to address you on the merits of alcohol in therapeutics, I was asked to treat the question from the standpoint of my own views. This meant that, in addition to the more familiar functions, those of the main ductless glands—the adrenals, the thyroid and the pituitary body as I have described them—should be taken into account. Had not all the work done in recent years served to emphasize the strength of my position, I should hesitate to comply with the courteous request of your officers, lest my views open false paths and lead to erroneous conclusions. As it is, however, no fear on that score need be entertained, even though I attribute to the organs referred to a rôle at least equal in importance to, if not greater than, that of any structure in the human

* Read at the Semi-annual Meeting of the American Society for the Study of Alcohol and Other Drug Narcotics, Philadelphia, April 6 and 7, 1910.

economy. Indeed, if pulmonary and tissue respiration, which uphold cellular life, and the processes through which the body defends itself against disease, and which thus perpetuate life, are paramount functions, we must concede the same relative rank to the thyroid, the adrenals, and the pituitary body, which jointly, from my viewpoint, carry on these functions.

To interpret adequately the manner in which alcohol affects the organism in the light of these newer facts, a brief account of the rôle of the adrenal secretion is necessary, since it is this secretion which it influences directly. The prevailing teachings concerning the manner in which the blood takes up the oxygen of the pulmonary air has been shown to be defective by many physiologists. One of these, Dr. Bohr, suggested in 1891 that the production in the lungs of some secretion capable of absorbing the oxygen would alone explain the respiratory process. Although considerable work was devoted to the question by various physiologists whose experimental results coincided with those of Bohr, the identity and source of the secretion remained obscure until 1903. My own researches then showed that it was not the lungs which produced the required substances, but the adrenals. I traced the secretion of these organs to the vena cava, and as a constituent of its venous blood, to the pulmonary air-cells. Here it was found to fulfill precisely the needs of the respiratory process: it took up the oxygen of the air and became a constituent of the arterial blood, or, more precisely, of its hæmoglobin, the identical substance which carries oxygen to the tissues to sustain in them the vital process.

The connection of this process with the effects of alcohol appears when we realize that it is precisely this oxidizing or oxygen-bearing component of the blood that it affects when used immoderately.

Buchner, Chittenden, Mendel, Jackson and many other authorities have shown that beverages which contain a small proportion, about 5 per cent., of absolute alcohol, such as light wines, beer, etc., increased the production of gastric juice and the activity of the digestive process. Being entirely oxidized in the stomach and promptly eliminated by the lungs and kidneys, this small percentage, unless taken in large quantities, does not influence morbidly either the blood or its oxidizing body. Such is not the case, however, when the proportion of absolute alcohol exceeds 5 per cent. to any marked degree. A beverage containing 10 per cent., for example, retards digestion manifestly, and if stronger, as is the case with brandy, whisky, etc., it tends besides, as first shown by Claude Bernard, to cause coagulation of the gastric secretion and its ferments. Under these conditions, the functions of the digestive tract are not alone interfered with, but considerable alcohol is absorbed into the blood. It is this absorbed alcohol which does incalculable harm. Being oxidized at the expense of the blood's oxidizing body—of adrenal origin—it robs the tissues of that which sustains their life. It does more: Inasmuch as the defensive power of the body fluctuates with its vital activity, beverages rich in alcohol, besides inhibiting the life process itself, place it at the mercy of disease-breeding germs, and thus actually help to destroy life.

This is further emphasized by the influence of alcohol on the ductless glands themselves. While small doses or weak solutions, as stated by Lorand,

stimulate these organs, large quantities of beverages strong in alcohol cause their degeneration, as shown by numerous autopsies. My work on the "Internal Secretions" contains a microphotograph showing a pituitary body in which alcohol produced sclerosis. Hertoghe and de Quervain have found alcohol harmful to the thyroid—an organ which, as is well known by cretinism and the marvelous effects of thyroid preparations in this disease, has much to do with the development of the body. The defensive functions of the body, if carried on, as I hold, by the ductless glands, are thus directly hampered by the use of alcohol in any but very weak solutions. This coincides with the recent observations of Parkinson, who studied the influence of alcohol on the auto-protective functions of the body. While his experiments showed that small quantities temporarily enhanced the production of antibodies, as soon as they were replaced by large doses the opsonic index fell; and if their use was continued, it remained low permanently, which meant that the immunizing functions were paralyzed. This confirmed the earlier experiments of Müller, Wirgin and others.

It is because of this fact that drunkards in general fare so badly in infectious diseases; their auto-protective mechanism is powerless to defend them. Quite in accord with these teachings of experience, Parkinson found that the reaction to vaccines was much less effective in alcoholized rabbits than in normal rabbits, and that the difference was still more marked when living micro-organisms were used. Many experiments by competent observers afford evidence in the same direction. Again, I have shown that the immunizing process of the body is closely linked and runs on parallel lines with oxidation; since alcohol in anything but small doses reduces oxidation, it inhibits in proportion our power to fight disease during the active or defensive phase of the morbid process, especially in febrile infections and toxæmias.

If alcohol is used at all, therefore, in the acute infections and toxæmias, it should only be given in small quantities and freely diluted. But better agents to enhance the defensive process are now available.

Alcohol is considered as a food-sparing agent by some observers, its value corresponding with its dynamic equivalent of pure food hydrocarbon. This presupposes, however, that alcohol is utilized by the tissues in the same manner as these hydrocarbons—merely because its oxidation liberates energy in the form of heat. But this is a fallacious conception; alcohol only simulates normal oxidations; far from being the product of cellular exchanges which constitute the vital process, the heat it liberates is at the expense of the tissue, since by becoming oxidized itself, especially in the liver—whereby the body is protected against its toxic effects—it utilizes oxygen intended to sustain tissue metabolism. If alcohol were a food, large doses would prove more profitable to the organism than small ones; but the reverse is the case; large doses inhibit all activities that would be enhanced by a liberal use of food. The debilitating action of alcohol on the nervous system, for example, has been demonstrated by Bunge, Schmiedeberg, Ach and Krepelin and others, while Dogiel found that it depressed markedly both motor and sensory nerve centers. It does this not only with nervous tissue, but with all tissues. A depressing agent cannot logically be regarded as a food.

On the whole, and strictly from the standpoint of pharmacodynamics, the researches on alcohol which have taken into account the functions of the ductless glands have only served to confirm, and perhaps to place on a firmer basis the opinions of those investigators who have considered the question both from the experimental and clinical standpoints. They have shown:—

(1) That, as is the case with all food accessories, coffee, tea, pepper, common salt, etc., alcohol becomes toxic when used immoderately, and when insufficiently diluted. Light wines, beer, and other beverages that contain a very small proportion of alcohol, when taken in moderation, tend to activate the functions of the ductless glands and therefore the auto-protective functions of the body.

(2) That the harmful influence of alcohol begins as soon as the proportion of absolute alcohol in a beverage exceeds 5 per cent. to any marked degree, the toxic effects being due mainly to its property of becoming oxidized at the expense of the blood and other body fluids and cellular elements.

(3) That when the proportion exceeds 10 per cent. and approximates that of brandy, whisky, and many patent or proprietary nostrums available in most drug stores, alcohol becomes an active toxic; it tends to paralyze the functions of the ductless glands, and therefore the auto-protective functions, thus giving free sway to pathogenic germs, their toxins and other toxics, venoms, toxic wastes, etc., that may be present in the blood, thus defeating indirectly and insidiously the efforts of the physician.

Authors' Abstracts

IMPORTANT THERAPEUTIC INDICATIONS IN THE TREATMENT OF TYPHOID FEVER.*

By J. BLAKE WHITE, M.D.,

NEW YORK.

HE knew of no means to assure an early diagnosis which could as yet supersede an astuteness in discernment acquired by a very careful and intelligent clinical study and observation of a number of cases. The various laboratory tests were well enough to look to for confirming a diagnosis, but none of them, or all combined, could take the place of intelligent clinical observation at an early period of the disease. While awaiting the results of such tests valuable time was often lost, and even after this delay one might perhaps be led to incorrect conclusions by the return of a negative report. Then, long after the diagnosis should have been made, and suitable treatment instituted, positive results might be obtained. He would, therefore, rather rely on clinical evi-

* Abstract of paper read at the Eleventh Annual Meeting of the American Therapeutic Society, held in Washington, D. C., May 5, 6 and 7, 1910.

dences, backed by his own judgment and experience, than wait for confirmation by these laboratory tests.

That typhoid fever was due to a specific germ, which spent its virulence in the intestinal tract, was generally accepted. A pathological condition was thus produced from which most if not all of the succeeding serious symptoms arose, demanding our most energetic and zealous attention to combat. To the extent, therefore, that we succeeded in modifying the intestinal morbid process would we not only lessen the thermic changes attending the disease, but also prevent the various complications which were formerly so commonly met with. Having referred to perforation and its consequent peritonitis, pneumonia, meteorism and meningeal complications, he said that intestinal hæmorrhage now so seldom occurred that he mentioned it only to say that if it should make its appearance it could be readily controlled by the administration of five or ten minims of rectified spirits of turpentine, in a soft capsule, at its earliest manifestation, and repeated at intervals of from two to four hours. Thrombosis and embolism were sequelæ to be expected occasionally, but by judicious attention to nutrition throughout the course of the disease, so as to maintain the blood in as good condition as possible, these might generally be averted. At an early stage—about the second week, when, under the antiseptic treatment employed by him, the temperature, with rare exceptions, declined to or near the normal—he usually gave some alcoholic stimulant, in addition to strychnine, believing that by this means convalescence was apt to be rendered more rapid and satisfactory.

The Brand bath or any other process of tubbing was in many instances too exhausting to be of benefit, and in some cases was positively harmful. The custom of applying chilling hydropathic treatment as a routine procedure could not, therefore, be too strongly condemned. His own observation of this means of reducing the temperature had satisfied him that it was the most irrational method of treatment that could be devised, since it was not expected to have, and never could have, any effect upon the pathological cause of the temperature, the combating of which was, after all, the chief indication for treatment. He was willing to admit that ablution had some useful application in developing vital activity and strengthening the power of resistance in the system; therefore he approved of and practised regular lavations with sterile water and alcohol, but he always directed that the water should be tempered to the enduring capacity of the patient. He used lavages more as a hygiene measure than for the purpose of merely effecting a reduction of temperature; believing that this could be more rapidly and permanently lowered by medication directed toward the modification of the morbid processes in the intestines which were considered primarily responsible for the fever.

It was of vital importance that regular function of the bowels should be maintained throughout the disease and convalescence, but diarrhœa occurring at any time and threatening to become an urgent symptom should be controlled by appropriate remedies. Under the method of intestinal antiseptics, however, it was much oftener necessary to have recourse to means for relieving constipation, and for this purpose laxatives, enemata, or irrigation of the

rectum with mild warm saline solution through a Kemp tube might be employed. Prior to 1896 the practice of antiseptic intestinal medication was brought to the attention of the medical profession by Dr. Woodbridge, of Cleveland, though his method of treatment did not receive the consideration which it deserved. Clinical experience of accomplished and competent observers, however, had tended to prove that antiseptic remedies of the group in which guaiacol occupied the first place, administered in the manner advised by Woodbridge, do lessen the condition of the bowel. The ideal treatment of typhoid fever, then, was that which, at as little expense as possible to the patient's vitality, has for its object the reinforcement of the natural powers, thereby affording a natural barrier to the inroads of the disease; to neutralize, if not destroy, and eliminate as far as possible the causes of morbid action before the products of germ infection have so far been established in the system as to materially impair the vital powers. For the causes of the fever, the toxæmia from local lesions, and the general blood dyscrasia, there was no better therapeutic resource than antiseptic medication. As a result of this method of treatment, Dr. White had found no affection so easily manageable as typhoid fever. He advised that as soon as the diagnosis of typhoid was made, or sooner, if there was any doubt about the matter, the antiseptic combination used by Woodbridge should be given, though in somewhat larger doses than he recommended. The best manner of administering the remedies was in tablet triturates, made friable enough to insure absorption, which should be taken at the rate of from twenty to thirty in the twenty-four hours; each tablet to be swallowed by two or three swallows of some pure spring water, unaërated. After some modification of the fever was obtained, usually by the end of the first week, he gave larger doses of the antiseptic, one tablet to be taken every three or four hours, with large draughts of water. Should a case not be seen until the disease had advanced so far that internal medication was impossible, he gave sodium sulphoborate by hypodermic injection at intervals of two, three or four hours, according to circumstances, until the patient was able to take the antiseptic tablets by the mouth.

As to the dietary, he gave eggs, meat broths, and milk, and as soon as the fever lessened, generally in seven days or less, he allowed the patient to chew pieces of rare steak, without swallowing the meat, until such time as the digestive organs manifested an ability to dispose of solid food. Cereals, well boiled, were permitted at any time, and the resort to solid nourishment just as soon as the patient's condition warranted it, usually at the end of the second week. In concluding he dwelt for a moment on how much the successful management of a case of typhoid depended on the intelligence, fidelity and watchfulness of the nurse.

HIGH FREQUENCY CURRENTS IN THE TREATMENT OF ARTERIOSCLEROSIS.*

By THOMAS E. SATTERTHWAITE, M.D.,

NEW YORK.

His attention was first called to the beneficial effects of high frequency currents in 1901. He then had under his care a physician who was recovering from a mild cerebral hæmorrhage. From the first he had continuously the infrequent pulse, 30 to 40. In addition to treatment by various heart tonics, he was given a quite extensive course of electricity by Dr. E. B. Perry, and there was no doubt in Dr. Satterthwaite's mind that this was attended by both temporary and permanent benefit. Static electricity was employed, with long sparks and the fine needle spray. In another case, of mild arteriosclerosis with aortic disease and cardiac hypertrophy, in a married lady of 65, the Nauheim treatment was given, followed by a course of iodine, and subsequently she was treated with the high frequency current by Dr. W. W. Johns, of Utica, N. Y. Previous to her coming under the author's care the maximum pressure had been 200. When the electrical treatment was begun, on February 17, 1909, it had fallen to 185. On March 27th it was 165; on April 10th, 150, and on April 17th, 145. There was also marked improvement in her general condition.

The method he now recommends is as follows: The patient is first subjected for a few minutes to the light bath, by means of which the blood is brought to the surface, and a sedative effect produced. Then the static breeze may be given: The sliding poles are pulled apart, so that there will be no spark, and the negative side of the machine is connected with the insulated platform by the long brass shepherd's crook, while the positive pole is grounded. The metal standard being placed near, with the crown over the patient's head, the negative electricity streams over his face, so that he feels the breeze. There is also an odor of ozone, which fills the room, the oxygen of the air having been changed to ozone, or, in other words, electrified. This treatment, which is continued for from five to ten minutes, is very soothing and helpful in asthenia. The patient is then subjected to the high frequency current. The plant for this consists of a resonator combined with a d'Arsonval solenoid and adjustable spark gap and a pair of condensers of the Leyden jar type. This apparatus is operated by a static machine of sixteen plates. The patient reclines on a "condenser couch," which is insulated by means of glass feet. Its cushion has on its under surface a fine metal plate, which extends its entire length and is connected with one pole of the Oudin resonator. The other pole of the resonator is connected with a vacuum electrode, and the fluorescent spark discharge is applied through the clothing of the patient by the operator's slowly moving the electrode over the surface. The séance lasts from ten to fifteen minutes.

* Abstract of paper read at the Eleventh Annual Meeting of the American Therapeutic Society, held in Washington, D. C., May 5, 6 and 7, 1910.

It is generally held that the static machine is more sedative and more efficient in other respects than the coil. The powerful waves of the static form of electricity cause short waves of vibration in the capillaries, which do no injury and promote metabolism in a remarkable manner. In Dr. Satterthwaite's experience, a diminution in arterial pressure is the regular sequel to the use of the high frequency current. The séances should not be prolonged beyond the time at which the pressure falls to normal, as this may prove harmful. Moutier has claimed, very properly, that while high frequency currents reduce arterial pressure, they cannot be said to be uniformly effective, as their action may be inhibited by errors of diet and other causes. Though as a rule he was able to secure a reduction in the pressure, in occasional instances this required as many as from sixteen to twenty sittings. The reduction once obtained, however, he claims, can be maintained for as much as three years without relapses. It has sometimes been advised to use the faradic current as an adjuvant. Intestinal atony is often a complication of arteriosclerosis, and here the faradic current, applied over the abdominal walls, may be helpful in relieving the constipation. In addition, Dr. Satterthwaite uses mercury, iodine, iron and arsenic, according to the indications present.

DISCUSSION.

Dr. P. Brynberg Porter, New York, said that the case of the physician reported by Dr. Satterthwaite was a most interesting one. He had known the patient intimately, both before and during his illness. The man is now in remarkably good condition considering the nature of his trouble.

Editorial

THE CARNEGIE FOUNDATION AND THE PHILADELPHIA MEDICAL SCHOOLS.

A "special" from New York to the "Philadelphia Press" of June 6th contains, among others, the following statement:—

"A sweeping attack on the evils of Pennsylvania's politically-juggled medical charity is embodied in a report which the Carnegie Foundation for the advancement of teaching to-day issues on the subject of medical education in the United States and Canada. The Keystone State is described, according to the report, as one of the worst offenders in turning loose on the community, through this wedlock of business and politics, a class of ill-trained doctors who are little less than quacks when the menace they are to the health of the confiding public is considered.

"The report which makes these startling charges is the result of investigations by Abraham Flexner."

If this newspaper report is true, when Mr. Flexner makes the statement that the Keystone State is "turning loose on the community . . . a class of ill-trained doctors who are little less than quacks," he is guilty of gross mis-

representation. The whole field of medical literature, the records of the Boards of Medical Examiners of all States supplied with such, those of admission Boards of the Army, Navy and Marine Hospital Service, and of all hospitals throughout the land, are available to demonstrate the high standard of Philadelphia's medical graduates. The State Examiner's records, as Mr. Flexner could have readily ascertained, indicate in fact that physicians—both male and female—trained in this city, stand with the foremost in their general averages.

The deductions of Mr. Flexner are as fallacious as his estimate of the standing of our medical schools is misleading. He tells us that out of the 155 medical colleges in the United States "fewer than 30 have acceptable hospital facilities," and yet he decries as "thoroughly objectionable and demoralizing" the fact that the State of Pennsylvania has for years "been distributing large sums" which have enabled Philadelphia schools to build and partly to maintain their own hospitals. What nobler purposes can public money be devoted to than to facilitate both the skilled treatment of the poor and the facilities for adequate practical teaching of applied medicine? Partly through this State beneficence each Philadelphia school is equipped with a modern hospital, and one of them (Temple University), with two—to say nothing of the Philadelphia General Hospital, one of the richest clinical fields in the world and other fine hospitals—open to all colleges. To this fact is due, indeed, much of Philadelphia's leading position as a teaching center.

Mr. Flexner's view that "consolidation" of medical schools is the proper course to follow serves but to show that his whole fabric is based on pure conjecture. If he fathomed the teachings of centuries of practical experience—that of Europe—he would have become familiar with the evils of concentration. Within the last few weeks the writer saw the main courtyard of the Paris Medical School filled with troops, police and "plain clothes" men to preserve order during an "examination" for *agrégés*, so intense was the feeling among the general profession and students against a system which enabled what they termed "pontiffs," "the elect"—the faculty, in other words—to arbitrarily select whom they pleased for these important teaching positions. It is the "boss" system personified, even though the "bosses" here are high-classed men, who think, at least, that they are serving the best interest of the school. In our country the results of "concentration," of which Mr. Flexner's plan would be the initial step, would prove far more pernicious, for it is not the modest and learned scientist who would reach the apex of power, but the hustling, ignorant wire-puller. Briefly, France is chafing and trying to rid herself of the very educational aristocracy—which even at best condemns a multitude of excellent men to effacement regardless of their ability—that Mr. Flexner and other theorists, in total ignorance of the teachings of experience, want to impose upon us with the aid of Mr. Carnegie's money!

What experience has taught, is that *the small medical school with ample hospital facilities is the ideal one*. Each student can receive individual attention from the teaching staff, come into contact with patients, and have a sufficient number of these at his disposal to acquire practical experience worthy of the name. The writer will never forget his first two years of study, spent in the

medical department of the University of California, then known as the Toland Medical College of San Francisco. There were but 60 students all told, and these had at their disposal the city and county hospital, containing some 360 beds. Besides attending didactic and clinical lectures and being "quizzed" by his teachers, the student was given charge of cases (only figuratively, of course) and had to report them in full before his clinical chiefs and fellow students, stand the fire of their criticisms and defend himself as best he could. If this did not inculcate practical knowledge, "engrave it on the tablets of his memory," as Professor R. Beverly Cole used to say, nothing could. This was thirty-four years ago. The best European medical schools are steadily approaching this ideal and essentially American plan. It represents also the trend of *all* Philadelphia medical schools; each is doing its utmost to raise its own standard, which is already on a par with that of many European schools. Indeed, the records of our State Boards suggest even a better relative standard, for while, as stated, Philadelphia graduates are among the foremost in examination averages, European graduates fail with comparative frequency, and those who do pass seldom exceed considerably the passing mark.

On the whole, if Mr. Carnegie wishes to benefit the medical profession at all, and through it suffering mankind, it will not be by accepting the statements of his misinformed agents. He should first realize that immense progress has been made in the United States during the last twenty years in matters of medical education, and that his munificences will prove most useful if they are employed to supply that which is *still needed* to raise our medical schools to the standard hoped for by their teachers, who, better than any one, are able to discern defects and indicate where improvements might be introduced.

Pending such a step, the writer would suggest, concerning a few of the main features of the Carnegie Foundation report:—

(1) That the preliminary education of medical students, in keeping with that of all other classes of American students, will not be materially improved until our preparatory and high schools and colleges will have ceased to neglect spelling and grammar. Medical colleges, by accepting none other than high school and college graduates, can enforce this by refusing to accept (as is the case in France) any examination paper containing more than three errors (credited to oversight or excitement) in spelling or grammar.

(2) That the prevailing four years' course, including at least the minimum laboratory work recommended by the Council on Medical Education of the American Medical Association, be raised to five, the fifth year being employed exclusively for clinical work at the bedside and in the dispensary by the students, under the supervision of clinical professors. Clinical examinations by the major professors, before the class at frequent intervals, would then determine his ability as a practising physician, and his right to graduation.

(3) That a medical college should be considered in good standing by the State Examining Boards, only when it can provide ward and dispensary facilities sufficient to carry out such a plan, and submit to periodical inspections by a committee of the said Boards.

This plan would work no hardship on schools that have striven to reach a high standard. The number of students would be decreased, but the extra year's fees would compensate for this. Additional clinical facilities would have to be provided, but this would only mean, in most instances, affiliation with one or more local hospitals, whose staff would be given positions as clinical professors. Charity patients, especially dispensary cases (which, owing to their great number, are often cursorily examined and treated), would profit greatly from the change, since carefully worked out histories, correct diagnosis, judicious (supervised) treatment and watchfulness would stand to the undergraduate's credit at his final examination.

It is by fostering the realization of some such plan which would place the United States at the head of all nations in medical education, rather than by destructive methods, that the Carnegie Foundation could, in the writer's humble opinion, fulfill a great mission.

C. E. DE M. SAJOUS.

Cyclopædia of Current Literature

ALCOHOL, ACTION OF, UPON THE HUMAN SYSTEM.

In health alcohol in moderation may be useful, but its continuous use is to be avoided, and it must be borne in mind that a certain idiosyncrasy may exist; in diseased conditions alcohol is, in many cases, of great value as a therapeutic agent of a temporary nature, always provided that it is used with discretion and its effects watched. Taken in excess or in smaller quantities over long periods of time, alcohol is extremely deleterious to the human system, so much so in fact that in many instances it has induced physicians to discontinue its use as a drug on the grounds that its disadvantages outweigh its advantages. H. A. Haig (Practitioner, June, 1910).

APPENDICITIS, CHRONIC, OF THE DYSPEPTIC TYPE.

Many cases of chronic appendicitis in which stomach symptoms predominated have been operated on in the past for

ulcer of the stomach, and a needless gastroenterostomy performed for the so-called medical ulcer. This procedure added bile regurgitation to the former distress, necessitating a second operation for relief. The authors have carefully reviewed the histories of about 200 patients of this type, comparing them with the histories of cases of gastric or duodenal ulcer and of gall-bladder disease, and have worked out the symptomatology and differential diagnosis of the condition.

There is a neurotic element, they find, in many of the cases of chronic appendicitis. Sex plays no important part. The average age—34 years—is less than in ulcer or gall-bladder sufferers. In general, the symptoms are irregular when compared with ulcer, and prolonged when compared with gall-bladder trouble (barring complications of these affections). The attack is ascribed to food intake more frequently than in the other conditions. Absolute disability, so that the

bed is sought, is common; it is rare, on the other hand, in uncomplicated ulcer and gall-bladder cases. Chronicity and periodicity are noted in all, but chronic appendicitis lacks the regular relief to all symptoms on taking food and the return of pain in one to four hours after meals, as shown in cases of ulcer. In gall-stones there are the short, clear-cut attacks, with sudden onset and abrupt cessation, and, when relief comes, perfect health instead of a period of general disability.

Pain in chronic appendicitis is often manifested as a queer feeling of distress. It is irregular in time, but during an attack oftenest appears soon after, or is directly caused by taking food. A rather continuous pain or distress, epigastric or indefinitely abdominal, is frequently present. Nausea, distress, flatulence and a feeling of distention cover the sensations of far more of the chronic appendicitis patients than of those with chronic ulcer or gall-bladder disease. Severe pain, we must remember, points to acute appendicitis, which the authors are not considering. As to the location of pain in ulcer it is purely epigastric, with radiation usually nil; in gall-stones it is also epigastric, but radiates to the right and back; in chronic appendicitis it may be epigastric only, but is often indefinitely epigastric and abdominal. Attacks of dyspepsia with epigastric pain, with radiation to or about the umbilicus or lower abdomen, are very suggestive of chronic appendicitis. A tender area is often found at McBurney's point. Anything taken into the stomach usually disturbs rather than brings relief; or, if some ease be felt, it is not regular and complete. The authors believe that attacks of diarrhoea or "stomach ache" in childhood are logical fore-

runners of the later dyspeptic appendiceal disturbances. *Vomiting* in ulcer occurs regularly one to four hours after meals, when the symptoms are at their height, and gives relief. In gall-stones this symptom is present only at the crisis. In chronic appendicitis vomiting is not so prominent as in ulcer, and does not afford much relief; it is irregular. When it does appear it closely follows the taking of food, and consists of food rather than sour liquid. The presence of nausea alone, without vomiting, is a characteristic feature. Discomfort from *gas* figures more prominently in chronic appendicitis than in ulcer. Belching does not occur, however, to the same extent as in ulcer, and there is not the intense feeling of distention that is experienced at the height of a gall-stone attack. *Constipation* is an early symptom of appendicitis, and may be the only one for a considerable period. The *appetite* often fails, or is so variable as to be of assistance in the diagnosis from ulcer, in which the appetite is rarely wanting, except late, and from gall-bladder trouble, where it rarely fails until pancreatitis or complications arise. Nutrition suffers in chronic appendicitis, both because of the anorexia and fear of the distress which follows food intake. The *test-meal* is of diagnostic value because it is so negative. There are no food remnants, and hence no obstruction. The stomach is usually normal in size and position, and the acids generally within normal limits. No organic acids, bacteria or blood are present, as a rule.

The treatment is operative. In certain doubtful cases one can only state that serious intraabdominal trouble exists. If the upper abdomen is found normal on exploration, one should look to the appendix as the most likely seat

of trouble. C. Graham and D. Guthrie (*Journal of the American Medical Association*, March 19, 1910).

ASTHMA, ANIMAL EXTRACTS IN THE TREATMENT OF.

A certain percentage of cases of asthma, in particular those of the essential or "neuroarthritic" type, is favorably influenced by the use of thyroid or corpus luteum preparations. The experience of the authors with this mode of treatment amounts to 14 cases, of which 7 (50 per cent.) were notably benefited. Thyroid was used in six of these patients, corpus luteum in one. The first case was that of a woman aged 42 who for twelve years had been subject to paroxysms of asthma, which appeared usually at intervals of one to three weeks, and lasted sometimes two days or two days and a half. On examination after a paroxysm the patient presented some of the signs of imperfect functioning of the thyroid, such as sensitiveness to cold, cyanosis of the extremities, loss of hair, swelling below the eyelids, nervousness, slight exophthalmos, tachycardia, and loss of weight. The administration of thyroid, at first in small doses (one cachet of 0.025 gram or $\frac{2}{5}$ grain of the powder daily), caused prompt improvement. In twenty-six months of treatment the patient did not have a single paroxysm of asthma, and gained markedly in weight. During this period she took in all 540 cachets, each containing 0.10 gram ($1\frac{1}{2}$ grains) of the dried powdered gland. The second patient was a woman 47 years of age who presented, in addition to asthmatic paroxysms, attacks of migraine, tachycardia, palpitation, tremors, premature whitening of the hair, etc., together with some swelling of the thyroid gland. The use of 41 cachets of pow-

dered thyroid resulted in complete cessation of both migraine and asthmatic attacks, with diminution in the thyroid swelling. The third case was similar to the last; the fourth and fifth, however, were without thyroid swelling, while the sixth patient showed infantilism. In the seventh case, a woman of 33, thyroid treatment yielded but little benefit; the administration of corpus luteum, on the other hand, gave prompt and lasting relief.

In addition to essential asthma, the use of thyroid may cause improvement in certain cases of pseudoasthma, associated with emphysema, certain instances of dyspnoea of asthmatic type (in renal and gastric infections), or of paroxysmal type (in pulmonary sclerosis of tuberculous origin), as well as in cases of ordinary "nasal asthma," or even "hay asthma." Léopold-Lévi and H. de Rothschild (*Bulletin médical*, May 14, 1910).

CHLOROFORM ANÆSTHESIA IN CASES OF HEPATIC DISEASE, DANGER OF.

The difficulties encountered in differentiating jaundice of infectious origin from jaundice due to chloroform have recently been emphasized. The writer cites the case of a man 24 years of age, suffering from lead intoxication and in addition addicted to alcohol, who came under treatment for a fractured patella with contusion of the adjoining soft parts. Under chloroform anæsthesia, which proved rather difficult of administration, the three fragments of bone were brought together and fixed by the loop method. Persistent vomiting followed the operation, and for several days the patient presented a slight icteric hue, without any particular elevation of temperature, but with the pulse at 110. The jaundice then progressively deepened,

anuria, delirium and stertorous breathing appeared, and death followed after a brief period. The autopsy revealed enlargement of the spleen, kidneys, and liver. Infection appears to the writer to have caused death in this case, but it would be wrong to assert definitely that the chloroform did not have an injurious effect on the liver. Sieur (*Bulletin médical*, May 14, 1910).

CLUB-FOOT IN INFANCY, TREATMENT OF.

It has been recognized that the crux of the problem of dealing with congenital club-foot lies in securing a satisfactory forcible overcorrection of the deformity. The technic of retention in this overcorrected position by means of plaster of Paris has also been perfected. The author lays stress on the fact, however, that mere retention in this position will not bring about a permanent cure. The most potent factor at our command for the cure of club-foot is the influence of weight-bearing upon the foot held in an overcorrected position. Since this factor is not available until the tenth to the twelfth month, it is unnecessary, the author contends, to maintain overcorrection by means of plaster of Paris until a period shortly before this. On account of the greater size of the foot, both the overcorrection and the retention dressing are more satisfactorily made at this time than in the first few months of life. Because of the greater age of the child, the correction as above suggested is much less objectionable to the parents. The period elapsing until the time for forcible correction has arrived is not to be spent inactively, however, but is to be utilized for increasing the flexibility of the foot by manipulations, accomplishing a partial correction of the varus by means of a splint. The daily removal of the

splint gives opportunity both for massage of the limb and active muscular effort on the part of the child. It is believed that by this means the residual atrophy of the leg muscles is held to a minimum. The whole period of treatment under this plan is not longer than under the older plan. One anæsthesia will, as a rule, suffice, whereas under the older plan several such administrations were usually required.

Tenotomy of the tendo Achillis for the correction of equinus should on no account be made until the other elements of the deformity have been disposed of. The equinus can be easily corrected at any time by tenotomy and proper after-treatment. The constant pull of the tendon upon the heel favors the development of the posterior process of the os calcis; early tenotomy does the reverse. It is also of great advantage as a counter-pull in making the overcorrection of the varus deformity. The equinus element may therefore be ignored in the infantile club-foot until the time for the final correction under anæsthesia. A. H. Freiberg (*Ohio State Medical Journal*, April, 1910).

COCAINE POISONING, ETHER IN.

Having had occasion to treat a number of cases of cocaine poisoning occurring largely in the hands of dentists, the author found that the action of strychnine and morphine in counteracting the poison was too slow in dangerous cases, and that the most effective treatment was to administer ether by inhalation. Cases which seemed hopeless were saved by this means, the depressing effects of the cocaine on the heart and respiratory system being antagonized almost instantly. The marked mental excitement is allayed as anæsthesia sets in, and the effect of the poison rapidly disappears.

The ether should be administered only to the degree of mild surgical narcosis, or even less. A mask should always be employed and the anæsthetic given by the drop method. In poisoning by stovaine or other synthetic preparations having an action similar to that of cocaine, ether will probably also prove valuable as an antidote. J. E. Engstad (Journal of the American Medical Association, March 19, 1910).

COLITIS, CHRONIC CATARRHAL, TREATMENT OF.

The rectal use of hot solutions of gelatin has been found by the writer to give good results in obstinate cases of catarrhal colitis with diarrhoea, which had proven refractory to the ordinary methods of treatment. Seven cases of this type, two of them secondary to dysentery, were cured, as shown by local examination and study of the fæces. A simple enema of one pint of water at 25-28° C. (77-82° F.) is first given. When this has been evacuated, the patient is to rest for half to three-quarters of an hour to allow the irritation resulting from the enema to subside. With the patient lying on the left side, 40 to 80 c.c. ($1\frac{1}{3}$ to $2\frac{2}{3}$ fluidounces) of a 10-per-cent. solution of gelatin in Carlsbad water (Sprudel), at 45-52° C. (113-125° F.), is introduced. The patient is then to stay recumbent for two hours, a warm poultice or other application being kept over the abdomen. By this method the fluid will almost invariably be retained, the upper rectal region and sigmoid being practically insensible to high temperatures, while the rectum in the region of the sphincters reacts strongly to heat. The use of a nozzle, 11 to 13 cm. ($4\frac{1}{2}$ to 5 inches) long, is therefore indicated. The appreciable amount of lime contained in the gelatin (0.6 per

cent.) probably plays an important therapeutic rôle, acting as a protective to the inflamed mucous membrane. Aldor (Therapeutische Monatshefte, April, 1910; Revue de thérapeutique, May 1, 1910).

CONSTIPATION, APPENDICOSTOMY IN.

Most patients suffering from chronic constipation can be relieved and, in many instances, cured by a regulation of the dietary and habits, aided by the occasional use of aperients. But there remains a certain number whom all such measures fail to relieve. The author regards appendicostomy as indicated in the following varieties of these cases: 1. Those cases of severe atonic constipation in which the whole colon is much dilated and sacculated, and is acting as a kind of cesspool which refuses to empty itself adequately. In this condition, if we can prevent the retention of fæces within the colon by constantly washing it out, we may expect that in time the bowel will recover its normal state. A case of this type is mentioned in which appendicostomy led to complete restoration of health; the patient still uses the artificial opening occasionally one and a half years after operation. 2. Those cases of obstructive constipation in which it is not possible to deal directly with the obstruction, as illustrated in a patient in whom inseparable adhesions between the stomach, transverse colon and abdominal wall had been found at operation; her repeated attacks of chronic obstruction were relieved after appendicostomy. 3. Cases of congenital dilatation of the colon, as an alternative to resection of the bowel. The writer mentions a case in which the operation of resecting the enormously dilated colon did not seem justifiable. Since the appendicostomy over a year ago the patient

has had no further attacks of obstruction, and has always been able to empty the colon by washing through it from above.

As a rule the operation is not difficult, though when the appendix is abnormal there may be considerable difficulty, especially in preserving the blood-supply. In two cases in which the lumen of the appendix only extended half an inch from the cæcum, a satisfactory opening was established by tying a catheter into the stump of the appendix, but the patients had subsequently to wear a small rubber plug in the opening to prevent its closing. In another case the appendix had no lumen, and the operation could not be performed. P. Lockhart Mummery (Practitioner, May, 1910).

CONSTIPATION, LOCAL MEDICINAL TREATMENT IN.

In cases with accumulation of hard faeces in the rectum, and where the mucous membrane is dry and excoriated in places, with pieces of adherent matter, and where the sigmoid and lower end of the colon is very sensitive to pressure, exceedingly good results are obtained by systematically washing out the colon and rectum with several quarts of hot water containing a few teaspoonfuls of sodium bicarbonate or borax or boric acid. The fluid should be introduced slowly and at a low pressure while the patient is in the knee-chest position or with the hips elevated. Following such a cleansing at night, one-half a tumblerful of oil is injected into the rectum and left over night. This, by antiperistalsis, will work up into the sigmoid and colon, where it will exert an emollient effect. Liquid petroleum may be used in the same manner. M. V. Tyrode (Boston Medical and Surgical Journal, May 19, 1910).

CYSTITIS IN THE MALE, CHRONIC, TREATMENT OF.

Colon bacillus cystitis without mixed infection is an acid cystitis and requires internally the administration of alkaline diuretics, such as citrate and acetate of potassium with infusion of buchu, together with the rather free use of alkaline mineral waters. Where, however, by reason of the nature of the infection the urine is alkaline, the use of one of the genitourinary antiseptic remedies is indicated, among which are, in the order of their value, urotropin, sodium salicylate, sodium benzoate, ol. gaultheriæ, ol. eucalypti, salol, and boric acid. A capsule containing 5 grains each of urotropin and salol acts well in cases of ammoniacal urine with marked phosphatic deposit.

By far the most important measure in chronic cystitis is irrigation of the bladder with medicated fluids. Most surgeons have come to lean on the use of potassium permanganate (1:8000) or silver nitrate (1:8000), preferably the latter. The author has employed with success a combination of both of these drugs in solution. The bladder having been emptied, a soft-rubber catheter or a Mercier is introduced until its eye lies just within the bladder, the irrigator having been previously filled with one pint of warm distilled water to which is added one grain of potassium permanganate and one grain of nitrate of silver. There is no chemical change in this combination, each drug acting apparently upon its own initiative. The solution is introduced through the catheter until the bladder is comfortably—not painfully—distended. It is then allowed to pass out and the manœuver is repeated, after which half an ounce of some one of the silver salts is injected through the catheter and allowed to remain. In many

cases an acute exacerbation with symptoms of acute cystitis will occur from time to time. Under these circumstances local treatment should for the time being be discontinued.

In tuberculous cystitis, in addition to the general hygienic treatment, the author administers internally 5 grains of guaiacol carbonate three times daily. In this affection local measures, when employed at all, should be in the form of instillation. Of all the remedies recommended for this purpose, iodoform has proved most beneficial. Twenty drops of a 20-per-cent. iodoform emulsion in liquid albolene, instilled with a deep urethral syringe into the bladder, every other day, seemed to bring about improvement in a number of cases. Guyon advises the instillation of bichloride of mercury, 1:10,000. H. M. Christian (*Therapeutic Gazette*, May 15, 1910).

GOITER, EXOPHTHALMIC, TREATMENT OF.

In the many cases of Basedow's disease which are due to psychic influences, a cure can be obtained by internal treatment alone. In cases of greater severity internal treatment may also prove valuable, and should be given a trial previous to surgical intervention, since cases which have already been improved by it respond better to operation. As preparatory measures the author recommends a sojourn at some resort having an elevation of 1000 to 1500 meters (3300 to 4900 feet), cool baths and lotions, a diet poor in albumin and fats, a rest cure interrupted by systematic exercises, and the internal administration of phosphorus, arsenic, and iron. Measures which produce a rise in the blood-pressure, as well as active diuretics, are to be avoided. Iodine, thyroidin, and anti-thyroidin give inconstant results, and

their effect is but temporary. The X-rays and radium have not proved of great value in this condition, and since their use is attended with some danger, can only be employed by experienced operators. The resulting adhesions and induration of the surrounding tissues also render the operation more tedious. The use of galvanic or faradic currents can only be valuable in the case of markedly vascular goiters. Reduction of the swelling is not easily secured, and is but temporary. In a number of cases, indeed, the use of electricity has been found to do harm. Local hydrotherapeutic measures often prove very acceptable to the patient, but their action is feeble and is not well sustained. Injections into the goiter are somewhat dangerous. The use of animal extracts has so far not been productive of results, with the possible exception of thymus and pituitary preparations. A. Kocher (*Münchener medizinische Wochenschrift*, March 22, 1910; *Revue de thérapeutique*, May 1, 1910).

GRAVES'S DISEASE.

Graves's disease is due to abnormal activity of the thyroid gland. In advanced cases degenerative changes in the thyroid gland may lead to a shifting symptom-complex, ending at last in the positive signs of myxœdema. The histology of the gland in this disease indicates shifting, advancing, and retrograding symptoms. An enlarged thymus is nearly always found post mortem in patients dead of Graves's disease. Advanced conditions may exist without the presence of all the classical symptoms.

If taken early, cure can nearly always be effected. The sera of Rogers and Beebe cure a goodly percentage of cases. Through hydrobromate of quinine (neutral), as used by Forchheimer and by

Jackson, a great percentage of improvements and of cures are found. The great and increasing experience of qualified operators is showing that more than 70 per cent. of Graves's disease patients are now being cured by partial thyroidectomy, and the percentage of such cures is rising.

The cases seen early should be treated by rest, by sera and by hydrobromate of quinine; if no improvement results in two months, thyroidectomy should be performed, and the operation should always be regarded as the surest cure. J. G. Mumford (Boston Medical and Surgical Journal, June 2, 1910).

HÆMORRHAGE IN BLADDER OPERATIONS, PREVENTION OF.

The suggestion of A. Bauer to prevent bleeding in operations for tubal pregnancy and placenta prævia by tying off the extremities with rubber bandages, was put to use in bladder operations by the authors with highly satisfactory results. Fifteen minutes before operation the limbs were tied up with gauze roller-bandages close to the armpits and the inguinal regions. When the skin of the extremities began to turn blue, the operation was started. The skin incision was practically dry and all the further steps appeared like operating under Esmarch or on a cadaver. A prostatectomy or a removal of a bladder tumor can thus be rendered almost dry and without any appreciable loss of blood. The bandages are then successively released. So far no subsequent hæmorrhages or other untoward results have been observed. The disagreeable sensations produced by rubber constriction were entirely absent, and no appreciable changes in the blood-pressure could be observed. It seems that the healing process is enhanced by the elimination

of all bruising of the tissues through blood-checking manipulations and by the prevention of intermediary hæmorrhages between the tissue-layers. Suprapubic prostatectomies were practically healed in three days in men 70 to 80 years of age. Another advantage is that with the reduced circulation less of the anæsthetic is required and the patients recuperate more quickly. The authors believe that this method can also be used with advantage in various other surgical operations. G. Kolischer and H. Kraus (Journal of the American Medical Association, April 16, 1910).

INTESTINAL PROTEIN INDIGESTION, TREATMENT OF.

Dietetic. The most valuable hints for diet are derived from the study of the fæces and tests of hepatic and pancreatic efficiency. If the patient is making good use of starches and sugars, while fats are fairly well digested, the indications are to cut proteins to a minimum, make cereals and other starches the main reliance, and supply assimilable fats guardedly. Since it will not do, however, to exclude proteids entirely, lest the patients continue to lose weight, a little lean meat once a day, or milk, or vegetables rich in protein may be allowed. The weight must increase in such cases if improvement is to take place. It is absolutely necessary to supply ferments, otherwise even the small amount of protein allowed will putrefy. Many patients miss the protein from their diet if too much restricted, and will rebel. Gelatin is very valuable in such cases, and may be given simply dissolved in beef broth, or as calves'-foot jelly or other jellies, or as Bavarian and other creams for dessert. Other cases do well on junket and whey. Buttermilk is an excellent article of diet, and may be taken freely. Fer-

mented milks are supposed to nourish and at the same time aid in disinfecting the intestine, and are particularly useful when the stomach is also deranged, as in anorexia nervosa and subacute gastritis. They are also valuable in gout and arteriosclerosis, which are often associated with intestinal putrefaction. Rectal alimentation is seldom needed for these cases. Where hyperacidity and spasmodic pain are important symptoms, olive-oil is often of service, best given hot. Tea, coffee, and alcohol are almost always to be forbidden, and copious drinking of distilled water encouraged.

Medicinal. The indications for drugs are chiefly six: 1. The immediate need is for a clean bowel, and this may be obtained by calomel or calomel with podophyllin, best given every hour for six doses, and followed by a saline the morning after. It will be necessary, however, that either cathartics or diuretics or both be taken for a long time. Where necessary, salines may accomplish the double purpose of flushing out the bowel and causing diuresis; but as a rule it is better to give salines only as diuretics, except with obese patients, cleansing the bowel otherwise. For this purpose phenolphthalein is best, given either in tablet form or as syrup, the latter especially for children. Usually one or two tablets every night will suffice, to be reduced later to one every other day or twice a week. Where other cathartics prove to be necessary, a proper pill may be alternated with a tablet of phenolphthalein. Certain articles of diet, like shredded wheat, may be used to aid the drugs. Consistent and persistent deep breathing will also be of assistance.

2. The various preparations of bile salts are efficient and convenient means of relieving such symptoms as offensive breath, coated tongue, hepatic pain, foul

odor of the fæces, flatus, etc. They stimulate the liver to produce more bile and of a more fluid quality.

3. The chief reason for the failure of the proteins to digest being often a lack of the normal ferments, these should be administered and kept up for several months while proteins are cautiously added to the dietary. When fat is not well digested, alkalies are indicated.

4. As intestinal disinfectants, salol, naphthalene tetrachloride, some of the guaiacols, creosote and sulphocarbolates are all useful at times. Schmidt finds that agar will take up 12 per cent. of hydrogen peroxide and give it off slowly in the intestine, and suggests that such a jelly, flavored and swallowed in rather large lumps, may prove valuable, especially if diarrhoea is marked.

5. The conditions in the stomach should always be studied. Hyperchlorhydria and gastrosuccorrhœa are well controlled by eumydrin, which may be given in doses of 0.001 gram ($\frac{1}{65}$ grain) t. i. d., and is best combined with sodium citrate. For the opposite condition suprarenal extract has lately been claimed to increase strongly the flow of gastric juice and production of HCl. The well-known measures may be required in addition.

6. Tonics are required in most cases, particularly at the outset. Anæmic cases usually do best when both iron and arsenic are given. Strychnin is best avoided, for the heart is apt to be irritable. A. E. Thayer and R. C. Turck (Medical Record, March 26, 1910).

MYASTHENIA GRAVIS, METABOLISM OF, WITH A SUGGESTION REGARDING TREATMENT.

In myasthenia gravis there may be marked loss of calcium by the tissues even under circumstances of marked

nitrogen retention. The creatinin output may be reduced to a point below normal; the output of creatinin nitrogen expressed in percentage of the total urinary nitrogen may be almost as low as that seen in conditions of true muscular wasting. These facts taken together form a reasonable basis for belief that myasthenia gravis is a disease of deranged muscular metabolism, and that one at least of these two factors (that is, the loss of calcium) may stand in such a causal relationship as to indicate the therapeutic administration of that element. Ralph Pemberton (*American Journal Medical Sciences*, June, 1910).

NÆVUS, LIGHT AND RADIUM IN THE TREATMENT OF.

Forty patients were treated with the mercury quartz lamp or with radium, or by a combination of the two. The number of cases unbenefited was very small and indicates that the treatment under consideration is a distinct improvement over the X-ray method, which the author states he has never observed to be productive of lasting benefit. In the presence of large reddish or purple nævi, if they are superficial and chiefly the result of dilatation of the capillaries with but slight involvement of the arterioles, the use of the quartz lamp is indicated. Small red arterial nævi, on the other hand, respond better to the radium treatment, -since its effect is exerted more deeply than that of the lamp. Mixed nævi of moderate size, which constitute the larger number of cases, should receive simultaneous treatment by both methods. The author never gives more than four or five exposures with the lamp, nor more than two or three with the radium. The time of application never exceeds one hour. The lamp, indeed, gradually loses its effect, often causing a

deposition of pigments which obstruct the rays of light. The same is true of radium which, when too often applied, results in a chronic dermatitis with telangiectatic dilatations. Even in the most favorable cases the skin becomes quite normal only at certain points in the lesion; in other areas it appears whitish and atrophic. Kromayer (*Deutsche medizinische Wochenschrift*, February 17, 1910).

NASAL HÆMORRHAGE, TAMPON FOR.

A tampon is used by the writer, composed of compressed cotton modified from Simpson's tampon, three inches long by one-half inch wide by one-sixteenth thick, wrapped as in a cigarette with gutta-percha tissue, the free edge being gummed down by some sterile ointment except at the ends. These smooth surfaced tampons are easily and usually painlessly removed, and he thinks they are much better than trusting to local medicinal applications in cases of post-operative hæmorrhage. Sterile water or salt solution should be dropped at the ends to cause the tampon to swell and fill the passage. Two can be used side by side in very wide fossæ, and they can readily be narrowed by clipping. M. D. Stevenson (*Journal American Medical Association*, June 4, 1910).

NERVOUS DISEASES, ORGANIC, ARSENIC IN THE TREATMENT OF.

The author reports the results obtained with arsenic in various nervous affections, mostly chronic, in the last six years. The drug was given by subcutaneous injections. Marked improvement in the subjective symptoms was noted in cases of disseminated sclerosis, with a considerable gain in weight. In some cases there was also functional improvement and even certain of the ob-

jective symptoms were found to disappear. Especially good results were secured in cases presenting merely disturbances of function of the lower limbs. In patients with advanced ocular disorders, however, it was found that but little benefit could be expected.

The injections employed in this series of cases were of a 1-per-cent. solution of arsenious acid, beginning with 1 mgr. ($\frac{1}{65}$ grain) of arsenic, increasing the dose every three days by 1 mgr. until 7 to 10 mgr. was being given, continuing this maximum dose for three to eight days, then gradually reducing the amount. The drug was discontinued for two weeks, then resumed on the same plan as before. Some of the cases studied were treated with the following preparation: Sodium cacodylate, 1.50 grams (23 grains); cocaine hydrochloride, 0.10 gram ($1\frac{1}{2}$ grains); liquid phenol, 3 drops; distilled water, *q. s. ad* 50 grams ($1\frac{2}{3}$ ounces). Beginning at 0.4 c.c. (7 minims), the dose injected was increased by 0.1 c.c. ($1\frac{2}{3}$ minims) daily until 2.0 c.c. (32 minims) was reached. This amount was continued for two weeks, then reduced gradually to 0.4 c.c. A similar solution, containing 5 per cent. of sodium cacodylate, was sometimes used.

Of five cases of multiple neuritis treated with arsenic, two instances in which the affection was mild showed distinct improvement, another mild case succeeding diphtheria was cured, and a fourth case improved gradually. The fifth case was particularly severe, the heart action being greatly disturbed. After a few weeks' treatment exclusively by injections of arsenic, great improvement in motion was noted, which later led to complete recovery. In cases of spastic spinal paralysis, paralysis agitans, Friedreich's ataxia, pseudobulbar paral-

ysis and hemiplegia, arsenical treatment was found ineffectual. H. Willige (Münchener medizinische Wochenschrift, March 22, 1910).

NOMA, AN EPIDEMIC OF.

In a recent epidemic of measles which occurred in a New York infant asylum, eight cases of true noma developed. Ulcerative stomatitis had appeared in fully 25 per cent. of the children, and it was among these that most of the cases of noma developed. Five cases terminated fatally. The writer discusses the results obtained by "radical" treatment (thorough cauterization of the ulcer and of adjoining tissue with the actual cautery), and by "conservative" procedures (topical applications of hydrogen peroxide, pure alcohol, and potassium chlorate). In three cases the spread of the gangrene was delayed about two weeks by repeated cauterization. In the three cases, however, in which frequent cauterization was employed after the ulcers had begun to spread, the radical treatment had no salutary effect; if anything, it appeared to hasten the spread of the process.

To the above eight cases of undoubted noma were added three others in which the diagnosis of noma was uncertain. In two of them, ulcerative stomatitis had developed, then cleared up with the exception of a single ulcer. In the third there was a single ulcer from the outset. In each case the ulcer was identical with that observed in the pre-gangrenous stage of noma, and specimens taken from its edge showed the streptothrix of Perthes. The lesions were submitted to frequent cauterizations, and after two to four weeks healed without any spread of necrosis or serious constitutional symptoms. It could not be proved that these cases were true cases of noma aborted by radical treatment, but the findings pointed

in that direction. Among the other patients with stomatitis several showed suspicious-looking ulcers. Specimens removed did not show the streptothrix, however, and none of these patients developed noma.

The following conclusions were reached by the author: Noma usually appears in epidemic form. Its contagiousness has not been proved. The disease is an entity, and not a later stage of ulcerative stomatitis. The latter offers a good soil for the development of noma. There is regularly present in noma a streptothrix characterized by a thick meshwork of mycelium at the border line between normal and necrotic tissue; fine rods and spirilla extend from the mycelium into the adjacent tissues. The constant presence of this streptothrix to the exclusion of other organisms indicates that, in all probability, it stands in direct etiological relationship to noma. The streptothrix is present before the disease is fully manifest—in the pregangrenous stage. It is in this stage of the disease that radical treatment is to be practised; after the ulcer spreads, the best results are obtained by conservative measures. General anæsthesia should not be employed in any form of treatment because of the pronounced tendency to the development of septic pulmonary disease. Cauterizations or the removal of specimens can be carried out quite painlessly. H. Neuhof (*American Journal of the Medical Sciences*, May, 1910).

PAINFUL JOINTS.

Only rarely, if at all, does prolonged pain in a joint mean chronic rheumatism. In every case of chronic joint trouble a chronic sepsis should be kept in mind and the portal of entrance sought for. This may be the genitourinary tract, the tonsils, the nasopharynx, the teeth, or a

tuberculous or other chronic pulmonary lesion. The relief afforded some of these patients from regulation of the gastrointestinal functions makes it seem probable that the primary source in some instances is connected with the alimentary tract. Among the more common mechanical disturbances causing vague pains are weak or flat-foot, knock-knee, loss of physiological spinal curves, disease of the spinal column, etc. The commonest joint lesions are those involving the sacroiliac articulation. The reason for this lies in the fact that any faulty posture of the trunk disturbs the relationship of the sacrum and ilium, thus straining the ligaments and muscles which are the only factors supporting these joints. In addition, the sacral plexus lies in close relationship, and in turn is subject to secondary trauma. Sacroiliac sprain is not infrequently termed lumbago. True lumbago is an acute myositis of the loin muscles, frequently seen in workingmen and usually following exposure to draught and cold. Its duration is usually very short and the pain invariably severe. Salicylic acid and allied drugs have no place in the treatment of these conditions, affording at best but temporary relief. To treat these cases properly, a thorough physical examination is essential in order to determine whether the pain is dependent on a functional or an anatomical defect, and in the latter event to ascertain, if possible, whether the joint trouble is secondary to a chronic suppurating focus. H. R. M. Landis and C. Muschlitz (*Pennsylvania Medical Journal*, March, 1910).

PERITONITIS, CAMPHORATED OIL IN.

The author describes a new method of treating cases of diffuse suppurative

peritonitis, based on the observation made by Glimm in animals that camphorated oil introduced into the peritoneal cavity caused the lymphatic channels to become occluded and prevented the absorption of pus and the toxic bodies contained in it. After opening the abdomen, ascertaining the seat of perforation and dealing with the condition present according to indications, the pus, wherever found, is removed with gauze sponges. It is important that this procedure be gone through as rapidly as is consistent with reasonable thoroughness. One hundred to 300 grams ($3\frac{1}{2}$ to 10 ounces) of 1 per cent. camphorated oil, previously sterilized and warmed, are then introduced into the peritoneal cavity and carried between the intestinal loops and over the parietal peritoneum by means of gauze. A lumbar or median counter-incision for drainage is generally made, the seat of perforation is protected by light gauze packing, and the primary incision then closed in the greater part of its length, a small aperture being left for drainage.

The above treatment was tried in 9 cases of peritonitis which had been considered hopeless; 5 of the patients recovered. The camphorated oil in no case caused untoward effects, and the possible danger of fat embolism was in no way suggested in the series. The camphor introduced with the oil caused improvement in the pulse. The formation of adhesions seemed to be prevented, none being found at autopsy in the cases which died two weeks after operation. Subcutaneous or rectal administration of 2 or 3 liters of normal saline solution, with a few drops of adrenalin added, has also proven valuable in the hands of the author. G. Hirschel (*Münchener medizinische Wochenschrift*, April 12, 1910).

PNEUMONIA, ACUTE, AND ITS TREATMENT.

The author relates his experiences with pneumonia in the Victoria Infirmary, Glasgow, and outlines the method of treatment employed. In the 460 cases recorded, including patients who died within twelve hours after admission, the death-rate was 27.17 per cent. Excluding the cases, 49 in number, who died in the first forty-eight hours after admission, the mortality was 18.49 per cent. Out of 128 cases in which the day of crisis was noted, and in which the disease was limited to one lobe, one patient had his crisis on the second day, 9 on the fourth day, 10 on the fifth day, 62 on the sixth day, 43 on the seventh day, and 3 on the eighth day.

In the treatment, the great benefit to be obtained from proper light and air, efficient ventilation, thorough cleanliness, and unvarying temperature was duly recognized. The patients were fed hourly while awake, the diet during the febrile period consisting of fluids, such as milk and well-thickened beef tea or chicken soup, about four fluidounces at a time. The milk was sometimes given in the form of curds. No poultices or other forms of external treatment were employed. Pain, usually pleuritic, was found to be best relieved by a firm binder, four or five inches broad, pinned round the lower ribs below the nipples. In the way of medicines, the sheet-anchor was a combination of chloral and digitalis, given every three, four or six hours— $7\frac{1}{2}$ to 10 grains of chloral hydrate, with 10 minims of the tincture or 1 or 2 drams of the infusion of digitalis. The chloral was never found, when given reasonably, to influence the heart-action unfavorably. The advantages of the above combination are many: it gives sleep, eases pain and cough, tends to

lower the temperature and slow the heart, dilates the arterioles and lowers peripheral vascular tension, besides being a trustworthy expectorant. The patients drowse through their illness, in marked contrast to others treated simply by stimulating or expectorant remedies. Strychnine is given when heart failure threatens, and must be given freely—5 minims of the solution hypodermically every four or six hours. Oxygen is valuable when cyanosis begins, and must also be used lavishly. Stimulants were used sparingly, and in less than one-half of the cases. A. Napier (*Glasgow Medical Journal*, March, 1910).

PYLORIC STENOSIS, CONGENITAL, PATHOGENESIS AND TREATMENT OF.

The fatty constituents of milk play an important part, according to the author, in the causation of pyloric stenosis in the newborn. The stenosis is due to spasm of the pylorus, hypertrophy of the sphincter occurring secondarily. In the two cases studied obstinate vomiting and gastric hyperperistalsis promptly subsided when fat-free feedings were started. In the transition to such a fat-free diet, a tapioca preparation, alternating with a suspension of flour in water, may be given with advantage. The flour suspension is then given alone; the flour employed should not contain over 5 per cent. of fat. By combining with this occasional nutrient enemas of albumose and sugar, the infant's weight may be kept up for several days. In the more serious cases the subsequent return to the normal amount of food should be gradual. Where gastric inflammation is not present, however, this period may be shortened. A fairly varied diet may then be well borne, including such preparations as tapioca broth, milk soups, peptonized and churned milk, malt prepa-

rations, and buttermilk. All these contain a low proportion of fats. P. Nolf (*Le Scalpel et Liège médical*, March 13, 1910; *Revue de thérapeutique*, April 15, 1910).

THYMUS GLAND TREATMENT OF CERTAIN DISEASES.

The author some time ago selected the thymus gland as theoretically possessing possibilities in the treatment of cancer, and has devoted the past three or four years to a study of the therapeutic uses of this gland. In addition to gout, goitre and metabolic osteoarthritis, in which thymus preparations had been used by other observers, he has employed it in a number of other disorders. Histories of a few of the most instructive and encouraging cases so treated are presented in the article. A case of exophthalmic goitre, under observation for one year, though not cured, showed continuous improvement under the administration of thymus. In two cases of arteriosclerosis in diabetics the blood-pressure was lowered and the arteries rendered much softer to palpation; the amount of sugar in the urine was uninfluenced. A case of rheumatoid arthritis showed decided improvement in all symptoms during the periods of medication. In three cases of bleeding hæmorrhoids thymus treatment caused great diminution or entire cessation of the hæmorrhages, improvement in the state of the blood, etc. A cystic tumor of the breast of doubtful nature in a woman aged 22 completely disappeared after six weeks of thymus medication. Two cases of pulmonary tuberculosis exhibited distinct improvement, as evidenced by the physical examinations, blood-counts, and by radiographs, which were made at the beginning of treatment and again two or three weeks later;

in a third case in which radiographic evidence was not available, marked betterment in the subjective symptoms was nevertheless observed. An undiagnosed case of epigastric tumor in a woman of 46 showed, in the course of four months' thymus treatment, gradual improvement in weight, color, appetite, and digestion, disappearance of the tumor, and almost complete disappearance of the epigastric tenderness previously present. Of two cases of epithelioma of the face, one had undergone two operations with return after each, the other had had 90 to 100 X-ray treatments with gradual progress of the disease. In both instances the morbid process was checked by thymus medication; complete cicatrization has not yet taken place, however, in either case.

In most of these patients the improvement was so prompt and continuous that there can be no question but that it was due to thymus. No other medication which need be considered was employed. Either the dried powdered thymus was used, in doses varying from 30 to 120 grains, three or four times a day, or one of the author's special preparations. Desiccated thymus can be purchased, but the author uses the fresh thymus glands of calves, dried by himself. The entire gland contains substances which retard and limit its action, and very likely one or more of its constituents antagonize others which have a curative value. The author has done much chemical work, but only recently have the preparations, used clinically, exerted a definite and continuous action. Taking cancer for test cases, he believes he is approaching that primary substance which will enable him to decide definitely the value of thymus medication. F. Gwyer (*New York Medical Journal*, February 19, 1910).

TUBAL PREGNANCY, CONDITIONS SIMULATING.

Gonorrhœal pyosalpinx, after the acute symptoms subside, may lie dormant for a long period. But it may at any time give rise to an acute exacerbation, and the onset of the pain may be so sudden and apparently causeless as to suggest tubal pregnancy, this suggestion being strengthened by the continued enlargement of the mass without decided fever. Sometimes other confusing symptoms occur, viz., missed menstruation, stomach disturbance, tenderness of the breasts, and softening of the cervix. The last three are accounted for by the peritoneal and periuterine irritation and congestion, but the missed menstruation is hard to explain, unless possibly it be itself the cause of the acute exacerbation. In such doubtful cases, chronic gonorrhœal salpingitis is to be excluded: 1. By inquiring into the patient's history. 2. By carefully examining for evidences of a chronic urethritis, Bartholinitis, endometritis or salpingitis. 3. By staining for the gonococcus any suspicious discharge, remembering, however, that in chronic cases negative findings do not exclude gonorrhœa. In rare cases acute gonorrhœa extends rapidly through the uterus to the tubes and peritoneum, causing but little disturbance of the vagina and vulva, and in this event acute peritoneal symptoms will come on without apparent cause. If delayed or scanty menstruation happens to co-exist, tubal pregnancy may be suspected. In such cases it is likewise advisable to examine for gonococci, even though the discharge be bloody and apparently non-purulent.

An early miscarriage, if associated with a tumor or followed by mild salpingitis, may very closely simulate tubal pregnancy, as membranes may be passed

in either condition. Chorionic structures should be sought in any shred of tissue passed. If the case remain doubtful, curettement to obtain tissue for microscopic examination for chorionic villi may be advisable, though in suspected tubal pregnancy such a procedure should not be carried out until the patient is in a hospital and prepared for abdominal section. A pregnant uterus may similarly present misleading conditions, such as irregular softening, displacement, hyperæsthesia with displacement or irregular softening or salpingitis, etc. An unsuspected tumor in the pelvis may suddenly give rise to severe disturbance, and if there happen to be present also some of the symptoms of early pregnancy, which often appear at most inopportune times, a mistake in diagnosis is very probable.

Ovarian hæmorrhage or tubal hæmorrhage due to conditions other than extra-uterine pregnancy may so closely simulate it as to be indistinguishable not only before operation but even after the affected structures have been exposed. It is well to remember that there may be slight hæmorrhage from the tube or ovary, particularly during menstrual congestion, not due to extra-uterine pregnancy and not requiring operation; and that in doubtful cases which do require operation the presence or absence of extra-uterine pregnancy should not be pronounced upon until a microscopic examination has been made. Salpingitis, appendicitis and gastrointestinal perforations in rare instances come on so suddenly as to suggest internal hæmorrhage from extra-uterine pregnancy, but they usually present certain distinctive features. Finally, fulminating pelvic œdema with its sudden onset and rapid development of alarming symptoms may closely resemble the condition;

there is, however, not the persistently blanched skin so characteristic of profuse hæmorrhage, and the pulse is likely to have better volume. It is evident that no one fact suffices to establish a diagnosis of extra-uterine pregnancy. It is even hazardous to depend on two or three facts unless they be well marked. Generally the diagnosis must be reached by exclusion. H. S. Crossen (*Journal of the American Medical Association*, February 12, 1910).

TUBERCULOSIS OF THE LARYNX, GALVANOCAUTERY IN.

The case is reported of a man aged fifty-five in whom laryngeal tuberculosis was treated with marked success by the electric cautery. His illness had begun with an attack of influenza, some months after which hæmoptysis had occurred. He complained of a lump in his throat, thickness of voice and pain during swallowing. Examination showed dullness at both apices, marked infiltration and a tuberculous outgrowth of the epiglottis and ary-epiglottic folds, and ulceration of the left ventricular band. The galvanocautery was applied freely into the ulcer and two punctures made with it in the epiglottis. The patient experienced very prompt though temporary relief from pain, and was ordered to inhale into the larynx a powder containing anæsthesin and orthoform in equal parts. The inhalations gave relief at first for a few minutes at a time, then for an hour, later from one meal to another, until finally he was able to eat and drink without them, though still using the treatments once a day. The epiglottic infiltration lessened, but ulceration persisting, another application of the cautery was made and punctures into the epiglottis and ventricular band repeated. After a third cauterization the pain gradually

disappeared entirely, and the epiglottis returned nearly to the normal thickness, though distorted by a scar due to the ulcer. The patient was at work throughout the period of treatment. His recovery seems to be largely attributable to the local treatment and offers some encouragement in these cases, even though the laryngeal lesion be of considerable extent. Dundas Grant (*Journal of Laryngology, Rhinology, and Otology*, March, 1910).

VARICOCELE.

In an analytic study of 403 cases of varicocele taken from the records of the Massachusetts General Hospital, the author notes that a large proportion of the patients were between 20 and 25 years of age and that 81 per cent. were single, and believes this a strong argument against the theory that the venous dilatation is due to a stagnating column of blood, for if this were true varicocele would be more common in later life when the circulation lags and constipation is common. There is much evidence in favor of its congenital origin. Eight per cent. of the present series claimed to have had varicocele since birth. The usual period of duration, however, was one to five years. Only 2 of the 403 cases were in negroes. The veins on the left side alone were involved in 91 per cent. of the cases, on the right side alone in 1 per cent., and on both sides in 8 per cent. Operative relief was sought by 270 of the patients on account of pain; 17 desired operation to fit them for examinations for civil service, etc.; 22 came because of the "inconvenience" alone, and in 68 no reason was given. Thirty-six cases, or about 9 per cent., were distinctly affected mentally, the loss of balance varying from profound hypochondria or melancholia to a mere habit

of dwelling on the condition. Testicular atrophy, meaning by this both a decrease in size, loss of testicular sensation, and change in the consistency of the organ, was found in 46 cases (4.5 per cent.), usually on the left side alone. Many authors believe that the changes noted are due to underdevelopment and not to true atrophy, arguing that radical operation soon restores the testicle to its normal condition. But this is not always true, and the situation at present may be said to defy explanation. Among the possible etiological factors of varicocele, constipation was noted in but 11 cases, and may be dismissed from consideration. Trauma had existed in only 22 cases, and also seems unimportant as a factor in view of the fact that at least 22 out of any 403 young men are likely to have sustained temporary injury in this region. Sixty-one cases (15 per cent.) were found to have epispadias, hypospadias or hernia, bearing out the congenital theory of the origin of varicocele by showing a tendency to congenital abnormalities in the individuals affected. Seventeen cases had additional varices in the hæmorrhoidal or the saphenous veins, while in four cases a family history of venous abnormalities was discovered. The author believes that we must discard the old ideas of the mechanical origin of varicocele, and lay greater stress on its being a congenital defect or overgrowth.

An investigation of the results of operation in 39 cases was also made, the data being obtained from one to ten years after operation. Of these cases 36 per cent. still complained of pain in the testicle or groin, 31 per cent. of tenderness in the testicle, and 27 per cent. of sexual hypochondriasis, which seemed to be independent of the often co-existing excellent anatomical result. Certain observers

have regarded fibrous degeneration of the testis after operation as the most frequent untoward result; but in the present series of cases no further atrophy occurred. Recurrence was found in 6 cases (15 per cent.). Thus, the so-called radical operation is by no means universally successful. Eighty per cent. of the cases, however, acknowledged that the operation had been a distinct benefit. J. D. Barney (Boston Medical and Surgical Journal, March 17, 1910).

VOLVULUS RESULTING FROM THE TREND- DELENBURG POSTURE.

Hysteropexy was performed for complete prolapse of the uterus in a woman 46 years of age. The inverted posture was employed. A day or two later symptoms of intestinal obstruction appeared, necessitating surgical intervention. On exploration a volvulus of the ileum was discovered, and in addition two loops of small intestine were found to have become caught beneath the lower border of the mesenteric band. The condition was thereupon remedied.

The obstruction having occurred at a point some distance from the seat of the first operation, the author believes that the inverted posture used was unquestionably responsible for the accident. The twist probably took place while the patient was being returned to the normal position after completion of the operation. The marked degree of visceral ptosis, with elongation of the mesentery, which the subject exhibited, was no doubt a predisposing factor. In conclusion, the author enjoins caution in the use of the Trendelenburg posture in cases of this sort and gentleness in bringing the patient back to the usual posi-

tion. It may even be justifiable to delay closure of the wound until the absence of any twist or constricting band after resumption of the normal posture has been ascertained. H. Duret (*Journal des sciences médicales de Lille*, January 8, 1910).

WOUNDS, PUNCTURED, TREATMENT OF.

In deep-punctured wounds in which infection is suspected or is known to be present, the following plan of treatment has given good results: Twenty cubic centimeters (5½ drams) of a solution of iodoform 5 grams (75 grains) and iodine 0.5 gram (7½ grains) in 100 cubic centimeters (3½ ounces) of ether (65 per cent.) is injected into the wound cavity and retained by placing a fingertip over the opening. The ether is volatilized by the warmth of the body, causes separation of the disorganized tissues by its expansion and renders all parts of the cavity accessible to the antiseptic agent. The occluding finger being soon after removed, sudden escape of the excess of volatile fluid takes place, carrying with it tissue-débris and foreign substances capable of favoring infection and hindering the processes of repair. The amount of iodoform deposited from the ethereal solution after such an injection is not sufficient to produce symptoms of intoxication. It is well, however, to avoid injections in the vicinity of the larger nerve-trunks. The efficiency of the method might be increased, the author believes, by combining with it the induction of passive hyperæmia by means of a constricting band or suction apparatus, the local action of the agent injected being thereby favored. Crouzet (*Gazette médicale belge*, March 17, 1910).

Clinical Summary

Of all practical articles and abstracts that have appeared in the *Monthly Cyclopædia and Medical Bulletin* during the current year.

Actinomycosis. DIAGNOSIS. Presence of corpora flava not essential to diagnosis of this condition. Repeated examinations of suspicious material often required. Only injection of actinomycotic pus or ingestion of material upon which actinomyces is grown will reproduce actinomycosis in animals; inoculation with pure cultures unsuccessful.

TREATMENT for actinomycosis of uterine appendages: 1. Extirpation and drainage. 2. For fistula, application of tribromphenol bismuth or irrigation with copper sulphate. 3. Potassium iodide internally, up to 75 grains daily. *Wagner.* Page 290

Addison's Disease. TREATMENT. Begin with 3 grains of desiccated adrenal gland three times daily after meals, and gradually increase the dose till temperature and pulse become normal; then maintain last dose. *Sajous.* 75

Adrenals, Diseases of. DIAGNOSIS. Adrenal insufficiency is suggested by: 1. Circulatory disturbances (small pulse, low tension, tachycardia, chilliness, white line). 2. Digestive disturbances (anorexia, vomiting, diarrhœa or constipation). 3. Nervous disturbances due to toxic irritation of plexuses around adrenals. 4. General disturbances (anæmia, emaciation, progressive amyotrophy). Diagnosis confirmed by benefit from organotherapy. *Boinet.* 27

Anæmia. TREATMENT. Seven cases of severe anæmia greatly benefited by transfusion of only 5 cubic centimeters (75 minims) of human blood. No benefit in cases of leukæmia. Transfusion of this amount generally harmless, though blood from certain persons showed some toxicity. *Weber.* 63

In anæmia due to auto-intoxication from gastro-intestinal tract, as often occurs in chlorosis: 1. Favor gastric functions by proper diet. 2. Secure regular bowel movements by laxatives. 3. Begin use of iron, giving following pill: Subcarbonate of iron, 0.10 gram ($1\frac{1}{2}$ grains); powdered aloes 0.02 gram ($\frac{1}{2}$ grain); extract of rhubarb, 0.05 gram ($\frac{3}{4}$ grain); two pills before meals. *Huchard and Fiessinger.* 298

Gastric hyperæsthesia in anæmia and chlorosis favorably influenced in several instances by aluminium silicate, given in the form of neutralon in doses of $\frac{1}{2}$ to 1 dram in 3 ounces of water, $\frac{1}{2}$ to 1 hour before meals. *Rosenheim and Ehrmann.* 352

Aneurism, Aortic. DIAGNOSIS. Early positive diagnosis only by the X-ray. Expansile pulsation not constant. Abnormal

dullness a valuable sign when present. Most constant sign is systolic bruit; present in 11 of 19 cases. Tracheal tugging in but 2 cases. Earliest and most constant symptoms were dyspnœa and cough. Interference with passage of bismuth capsule the size of a quarter through œsophagus found present in every case tested (by X-rays); especially valuable in small aneurisms growing back from transverse part of arch and shows œsophageal obstruction before dysphagia appears. *Lange.* 349

Angina Pectoris. DIAGNOSIS. Presence or absence of signs of organic disease at root of aorta should be ascertained. Signs of general arterial or aortic disease coexisting with history of precordial pain warrant diagnosis. A slight harsh clicking sound accompanying or following the sound of aortic closure, suggesting to the ear a roughening of the aortic cusps, is of value in the diagnosis. *Butler.* 22

TREATMENT. Erythrol tetranitrate has a less marked but more lasting effect than nitroglycerin. Especially indicated in those patients who are awakened at night by the pains. *Huchard and Fiessinger.* 172

Ankylosis. TREATMENT. Fibrolysin used with benefit in joints ankylosed as result of rheumatic affections. Single dose used was 2.3 cubic centimeters (37 minims) subcutaneously, sometimes more; largest total amount given was 117.3 cubic centimeters (4 ounces). Untoward effects: sometimes sensation of fatigue on day of injection, and occasionally slight local inflammatory reaction, which disappeared with moist dressings. Best results where ankylosis due to extra-articular connective tissue; less improvement in presence of pus and in gonorrhœal cases. Used in conjunction with hygienic and dietetic measures, warm sulphur baths, and later active and passive movements. *Knotz.* 124

Appendicitis. DIAGNOSIS. Following sign often useful in diagnosis between appendiceal and pelvic inflammation: Stretching skin of abdomen slightly to increase its translucency, veins internal to anterior superior spine, and running upward and slightly inward, will be found darker than elsewhere when appendix involved. *Skinner.* 350

Appendicitis, Acute. TREATMENT. Where patient carried through an attack without operation, give only liquid diet till appendix removed. In perforative or gangrenous cases suffering from beginning diffuse peritonitis, gastric lavage, slow instillation of normal saline by rectum and abstinence from ca-

thartics or food by mouth are indicated; 97 per cent. can later be safely operated. *A. J. Ochsner.* Page 360

Appendicitis in Pregnancy. TREATMENT. In severe cases operate without delay. Mild cases do not demand operation unless there are frequent attacks. When near the end of gestation or in labor, terminate pregnancy and remove appendix immediately after. *Findley.* 160

Arteriosclerosis. DIAGNOSIS. Careful ophthalmoscopic examination frequently reveals the earliest signs of arteriosclerosis. *Bruner.* 23

Arthritis Deformans. TREATMENT. Progress of disease often stopped by removal of causes of irritation, such as inflamed appendix, hæmorrhoids, etc. Where primary lesion obscure or no longer operative, best results obtained indirectly by relieving pain in affected joints. This is done by applying an absolutely rigid retention dressing, with the limb in such a position that the antagonistic muscles are in absolute equilibrium. If limbs cannot be brought into desired position without extreme pain, contractures are broken up under anaesthesia, and tendons lengthened, if necessary, by tendoplasty. Plaster-of-Paris dressing is applied, and allowed to remain until pain and irritation have subsided. A new plaster mold reinforced with basket splints and wheat gluten bandages is then substituted. *E. H. Ochsner.* 221

Ascites. TREATMENT. Autoserotherapy retards transudation into peritoneum and produces lasting polyuria. Under local anaesthesia withdraw a little fluid from peritoneal cavity with sterile hypodermic syringe, and at once reinject in subcutaneous cellular tissues. Repeat at six-day intervals, injecting progressively larger doses of ascitic fluid (3, 5, 8, and 10 cubic centimeters). Continue treatment for two months. *Audibert and Monges.* 160

Asphyxia. TREATMENT. Adrenalin, slowly administered intravenously; 10 drops of 1 : 1000 solution in 1 dram of saline solution. Artificial respiration. *Sajous.* 75

Asthma. TREATMENT. To arrest paroxysms, adrenalin (5 to 10 minims of 1 : 1000 solution in 1 dram of normal saline) may be slowly injected into a superficial vein or hypodermically. *Sajous.* 75

Brain Tumor. TREATMENT. A decompression operation is indicated where grave symptoms of increased intracranial pressure exist, and especially should not be delayed when papilledema (choked disc) is developing rapidly. If the symptoms do not call for immediate decompression, antisyphilitic treatment may first be tried. *Spiller.* 223

Bronchitis, Chronic. TREATMENT. 1. Potassium iodide combined with syrup of hydriodic acid; may be alternated with terpin hydrate. Creosote is also valuable; combined with whiskey and glycerin it will rarely disagree with the patient. 2. Sedatives or ano-

dynes to be avoided. The least objectionable are bromides, henbane, or codeine. Where dyspnoea or nervous irritability, Hoffmann's anodyne, with the iodide. 3. A mercurial followed by salts, once a week or oftener, reduces cough and expectoration for a time. 4. Persistent counter-irritation to the chest, using compound tincture of iodine; occasional interruptions when skin becomes tender. 5. Inhalations of a mixture of equal parts creosote, alcohol and spirit of chloroform, using perforated zinc inhaler. 6. Patient should not be housed. Change of climate where practicable; preferably to Georgia in winter, Adirondacks in summer. *B. Robinson.* 88

Carbuncle of Face. TREATMENT. Passive hyperæmia by means of band around lower part of neck used with success in carbuncles of face and on back of neck (when high enough). Use band of rubber tissue 3 centimeters broad. Mild constriction sufficient and band should be worn 20 to 22 hours daily unless œdema appears. Relieves pain; on third day purulent discharge sets in, lasting a few days. Avoid squeezing out pus. Intervention with knife unnecessary. *Keppler.* 292

Carcinoma. TREATMENT. Quinine, stirred with water to a paste, used locally in cases of epithelioma where operation refused. Application repeated four times on alternate days. Caustic action at first exerted on ulcers, which later healed completely under simple iodoform dressing. Also useful in palliative treatment of inoperable uterine cancer. The remedy is of diagnostic value, as on ordinary erosions it does not have the destructive effect produced on cancer. *Stroné.* 94

The use of high-frequency currents found valuable in treatment of malignant growths, denuded surfaces, slowly healing wounds, and tuberculosis. On epitheliomas they exert a selective cytolytic action. Infected glands disappear, and discharge becomes odorless. Current has an analgesic effect. Time of application should never exceed 10 minutes. For internal growths current is used after operation to promote cicatrization. *Rivière.* 124

Acetone used in palliative treatment of 15 cases of inoperable uterine cancer. Hardens the tissues and stops hæmorrhage, septic absorption, and odor. After curetting under ether, solution of acetone is poured into the cavity through a conical speculum, contact with normal vaginal tissues being avoided. Hips elevated. Excess drained off through speculum and subsequently by tampon. When discharge begins again treatment is repeated without ether. Pain was not relieved but marked relief obtained from general infection. *Tovey.* 122

Carcinoma of Sigmoid and Rectum. DIAGNOSIS. 1. Early suggestive symptoms. Soreness in lower bowel, borborygmus, cramps, diarrhoea, mucus, pus, or blood, difficulty in completely evacuating bowel, distention in lower abdomen, with history of

having felt something move after change of position. 2. Later: Emaciation, weakness, and pain in sciatic regions and calves of legs. 3. Local examination and removal of section of diseased tissue for microscopic diagnosis.

TREATMENT. Where obstructive distention requiring prompt relief, establish artificial anus, temporary or permanent according to extent of morbid invasion. Where immediate relief not essential, operation depends upon position of growth and surrounding infiltration. Complete excision wherever possible, with anastomosis or artificial anus. Preliminary colostomy may be advisable to improve chances of recovery after excision. Where excision of a sigmoid growth not possible, anastomosis may be established in one of several ways; in case of rectal or anal growth, palliative treatment by drugs, with curettage and cauterization. Making of an artificial anus relieves pain, has low mortality as compared with excision, and often leads to distinct subsidence of growth.

Erdmann. Page 169

Carcinoma of Stomach. **DIAGNOSIS.** Danger-signal: middle age, loss of weight and strength, with perhaps some dull epigastric pain. If, in spite of six or eight weeks' careful treatment, symptoms increase in severity, loss of weight becomes more out of proportion to dyspepsia, appetite leaves, and some anæmia appears, diagnosis of probable malignancy is justified and operation indicated. *Deaver.* 175

Malignant disease has been demonstrated by X-rays, through its invasion of stomach-cavity and resulting changes in peristaltic waves. *Leonard.* 178

Cataract. **TREATMENT.** Euphthalmin hydrochlorate in 3 or 5 per cent. solution used as mydriatic in cases of bilateral cataract where central opacity precedes cortical involvement and where iridectomy for any reason cannot be performed. Vision through the uninvolved cortical portion of the lens thus becomes possible. After using one or two drops in each eye, mydriasis begins in 20 minutes and lasts 4 to 7 hours. No untoward effects observed. *Dufour.* 165

Cellulitis with Gangrene. **TREATMENT.** Case of diffuse phlegmon of leg with gangrene treated successfully with: 1. Linear applications of thermocautery. 2. Subcutaneous injections of hydrogen peroxide 1 to 2 centimeters above infected area. 3. Passive hyperæmia induced thrice daily by rubber bandage above knee. 4. Daily bathing of part in warm permanganate solution. 5. Wet dressing of hydrogen peroxide. *Petit.* 173

Chilblains. **TREATMENT.** 1. Measures to allay co-existing irritative influences originating in various portions of body, as the nasopharynx, teeth, respiratory or digestive tracts, etc. 2. Gymnastic exercises of extremities at hourly intervals. Arms raised

above head, with alternate flexion and extension of hands and fingers. Similar movements of lower limbs. 3. Protection from cold. 4. Kneading, after raw surface of chilblain has become covered. *Jacquet and Jourdanet.* 162

Cholecystitis. **TREATMENT.** Irrigation with normal saline solution, at the rate of about six drops per second and with elevation of one foot, of biliary fistulæ, after drainage of gall-bladder for cholecystitis, cholelithiasis or cholangitis: 1. Produces prompt diuresis. 2. Hastens disappearance of chronic jaundice. 3. Often relieves postoperative biliary vomiting. *McArthur.* 87

Curable by diet and hygiene or operation. Cholecystostomy usually adequate. Cholecystectomy when gall-bladder gangrenous or duct completely obstructed; should be performed several months after primary cholecystostomy. *B. Holmes.* 292

Collapse from Hæmorrhage. **TREATMENT.** Suprarenalin or adrenalin given very slowly by intravenous method. Use 5 minims of the 1:1000 solution to a pint of warm saline solution (105° F.). In urgent cases, 10 drops may be given in 1 dram of saline solution, and repeated at intervals until heart responds. Artificial respiration hastens effects. *Sajous.* 75

Collapse in Infections. **TREATMENT.** Obscure collapse in infections often due to adrenal insufficiency. As soon as asthenia and lowered blood-pressure appear, administer adrenalin solution (1:1000) or cachets of glandular extract. In children give 10 to 20 drops of 1:1000 solution daily, divided into 5 or 6 doses. *Moizard.* 160

Coryza. **TREATMENT.** Sodium salicylate causes a cold to abort if taken within 24 to 36 hours. Single dose of 7½ grains (0.5 gram) often suffices. Taken later, it relieves symptoms and shortens attack. It is also valuable in the chronic coryza of gouty subjects. Should be taken after eating, and preferably in small doses, dissolved in half a glassful of water. *Courtade.* 174

Cystitis, Acute. **TREATMENT.** Collargol beneficial when used locally in this condition or in pyelitis. *Albrecht.* 234

Delirium Tremens. **TREATMENT.** Veronal used in 100 cases, and all but 3 benefited. Initial dose of 1 gram (15 grains) in incipient cases, repeated in 3 hours if sleep does not follow. Sleep then usually lasts 6 to 8 hours and on waking patient is quiet and feels well. If tremor is still present, 0.5 gram (7½ grains) veronal may be given. The same dose every evening prevents insomnia. Where delirium is not controlled by the first 2 grams, another gram may be given 5 to 6 hours after the second dose. One case of veronal rash noted. *Möller.* 88

Diabetes. **TREATMENT.** Phosphoric acid preparations valuable in diabetic cachexia. Phosphoric acid, 75 grains; acid sodium phosphate, 150 grains; distilled water, 10 ounces;

one tablespoonful in water at every meal. Contraindicated where albuminuria. *Cautru.* Page 163

Calcium iodide used in 17 cases in doses of 5 to 15 grains three times daily, after treatment with codeine and diet had proved unsatisfactory. In all cases subjective symptoms were improved and amount of sugar in urine diminished. *H. E. Smith.* 164

X-rays projected over hepatic region cause decrease in glycosuria and rise in red blood corpuscles. In one case amount of sugar passed daily was reduced by 400 grams. Particularly effective in grave forms with emaciation and debility, less so in mild cases and those of obese type. *Ménétrier, Touraine and Mallet.* 178

Diarrhœa, Dyspeptic, of Infancy. TREATMENT. Calomel, one grain in broken doses, followed in 2 hours by castor oil, one dram. Daily irrigation of colon. If much vomiting, wash out stomach and colon, and follow by starch enema not exceeding 2 ounces. For two days give barley water, 2 fluidounces every 2 hours; for next two days, whey, 2 fluidounces every 2 hours. *Hollopeter.* 97

Digalen. This form of digitalis is not invariably free from cumulative effect, as has been claimed, but is better borne by the stomach than the galenic preparations. *Mayor.* 164

Drowning. TREATMENT. Adrenalin, 10 drops of 1:1000 solution in 1 dram of saline solution, slowly administered intravenously. Repeated at intervals until heart responds. Artificial respiration. *Sajous.* 75

Duodenal Ulcer. DIAGNOSIS. In cases of epigastric pain coming on some time after meals, presence of Cammidge's C reaction shows probable existence of a duodenal ulcer rather than a functional hyperchlorhydria in stomach. Five cases in which reaction was positive and duodenal ulcer found at operation. *Herschell.* 293

Dysentery, Amœbic. TREATMENT. 1. Rest important, even using opium if required. 2. Calomel at first where patient strong, then magnesium sulphate, 1 dram every 3 hours, as long as scybala being passed. Purgatives bad, however, where initial symptoms very acute, and in late stages. 3. Ipecac, in capsules of animal membrane or salol-coated pills; 30 grains in one dose on first day, reduce by 5 grains on each succeeding day until sixth, then give 5 grains nightly for a week or 10 days longer. Patient should fast 4 hours before taking the remedy, and remain quiet afterward. 4. Colonic irrigations hardly give better results than ipecac. Best is quinine 1:5000, increased to 1:1000; next to quinine is silver nitrate. Have fluid retained 15 to 20 minutes. 5. Appendicostomy where refractory to rectal irrigations. Marked success in 2 cases, using quinine or saline solution through fistula. Perform operation in two stages: first bring base of appendix against abdominal wall, stitching meso-appen-

dix to peritoneum; 48 hours later, apply cocaine to appendix, snip off with scissors and introduce No. 10 rubber catheter. *Anders and Rodman.* 290

Dyspepsia of Old Age. DIAGNOSIS. Of every 100 cases in persons over 65 years of age, 66 are secondary to organic disease of some important organ (kidneys, prostate, heart, lungs, liver, pancreas, chronic gout, etc.); 34 are due to degeneration of gastric and intestinal secretory structures. *Fenwick.* 24

Eclampsia. TREATMENT. Bilateral renal decapsulation employed in three dangerous cases with excellent results, after other measures had failed to bring on diuresis. *Lichtenstein.* 294

Eczema. TREATMENT. X-rays of value in subacute and chronic forms. In vesicular variety, mild applications suffice; in squamous and pustular eczema, more vigorous treatment required. Eczema of lips, ears, axillæ and anal region especially adapted for X-rays; itching relieved. Seborrhœic eczema of face also benefited. *Müller.* 239

Emissions, Nocturnal. TREATMENT. Styptol (cotarnine phthalate) found to prolong interval between emissions to from one to three weeks in all cases. Two, then three, styptol tablets of $\frac{3}{4}$ gram each administered before retiring, for a month. Fluidextract of hydrastis, 40 to 60 drops before retiring, also recommended. *J. Koenig.* 127

Epilepsy. TREATMENT. Diet low in proteids caused reduction in number of seizures by 14 per cent. Each of the three daily meals given consisted of 125 grams of bread, 16 grams of butter, and 250 cubic centimeters of milk. *Rosanoff.* 89

Exploratory trephining advised in traumatic epilepsy. Eleven cases operated, four of idiopathic and seven of surgical epilepsy. Cysts found in two instances, cicatrices in four, and œdema of pia in all. Improvement resulted in all the cases from removal of œdematous fluid. Epileptic attacks returned in four cases. *Tilman.* 127

Epithelioma. TREATMENT. Commercial 40 per cent. formaldehyde solution applied in two cases with successful results. After three applications dead neoplastic tissues separated, leaving granulating surface, which later healed completely. Pain obviated by injections of 1 per cent. novocaine solution. No recurrence in ten months. Method suitable for comparatively small lesions without lymphatic involvement, where patient refuses operation. *Hallepeau and Fumouze.* 294

Extra-Uterine Pregnancy. TREATMENT. In first half of an ectopic pregnancy operation for removal of gestation sac is indicated wherever conditions permit. In latter half, however, patient, under favorable surroundings, should be allowed to go within two or three weeks of term before operation, meanwhile being kept under watch. Removal of placenta at operation is of cardinal impor-

tance; if this be impossible, placenta should be shut off from peritoneum by gauze. Dependent drainage through vagina should be secured. *Peterson.* Page 225

Felon. TREATMENT. Operation advised as soon as diagnosis made. Patient should eat a substantial meal before the operation, and remain in recumbent posture until half an hour after operation is over. After applying tincture of iodine, inject sterile 1 per cent. cocaine solution in a circle at root of finger; as much as 3 or 4 grams (45 minims or 1 dram) of solution may be used. If felon very small, inject instead around lesion itself, 1 centimeter from its margin. Five minutes later incise, irrigate with hydrogen peroxide and establish drainage. Rest of treatment includes bathing of part in warm peroxide (1 in 4) and sterile compresses of same. *Appelmann.* 167

Femur, Fracture of. TREATMENT. Combination of Buck's weight and pulley system with suspension by the Hodgen splint gave very satisfactory results. Traction can be accurately measured and maintained, transverse displacement corrected, and comfort greatly increased. After extension is applied, the supporting bands attached to splint are passed under limb, which is then swung clear of bed. Supporting bands are adjusted to make support uniform, and later, if desired, to exert coaptative pressure anteroposteriorly or laterally on the fragments. *Stimson.* 226

Fibroids, Submucous. DIAGNOSIS. Gradually increasing dysmenorrhœa and menorrhagia, with consequent anæmia and "nervous debility," are typical symptoms which, in a woman of thirty years or over, should lead one to suspect this condition. In differential diagnosis, enlarged uterus from subinvolution, metritis, endometritis, and pregnancy should be considered.

TREATMENT. When submucous fibroid large and sessile: hysterectomy. Vaginal operation limited to removal of polypi, owing to importance of exploration of pelvis and abdomen where tumor of some size. Transperitoneal enucleation slightly increases operative risk, but if desired by patient in order to preserve uterus, may be performed. *Truesdale.* 225

Fibrolysin. Best given by intramuscular injection in dose of 35 minims (2.3 cubic centimeters), every other day. Desired solvent effect on local connective tissues is kept up by massage of the part. Connective tissue surrounding old infectious foci may also be affected and dormant bacilli set free; hence it is well to search for and exclude previous inflammatory disturbances in every case before using this remedy. *Stocker.* 167

Fistula, Anal. TREATMENT. Posterior commissure is weakest part of anal circumference. In ulcerations or small fistulas of this commissure, author makes a triangular incision with apex towards anus. In fissures, an incision $\frac{1}{8}$ inch deep is made into

sphincter muscle on each side of fissure, which thus remains undisturbed at defæcation and heals more rapidly. *Brick.* 168

Furunculosis. TREATMENT. In furunculosis, carbunculosis, acne and subcutaneous abscesses brilliant results from vaccine therapy can be expected. In chronic cases, best results when a fresh vaccine is prepared from the pus every two to four weeks. Cautiously increase dose at successive inoculations. *Thomas.* 161

Gallstones. DIAGNOSIS. Too often delayed. In most cases condition begins before fortieth year. Almost every patient will give history of long-standing dyspepsia, capricious appetite, constipation, flatulence largely independent of meals, and discomfort when stomach is empty. Later, acute attacks of pain in right upper abdomen may appear, and finally true biliary colic, with vomiting. Sensation of chilliness is characteristic. Jaundice, hematemesis, etc., as well as laboratory methods, are practically valueless for purposes of early diagnosis from gastric and duodenal ulcer. *Deaver.* 175

Gangrene, Diabetic. TREATMENT. Currents of air heated to 150°, 300°, 500° C., or even higher, applied repeatedly, found to prevent extension of gangrene and arrest toxic absorption by producing carbonization of the part. Amputation can then be performed with greater safety. *Dieulafoy.* 223

Gastro-enteritis of Bottle-fed Infants. PROPHYLAXIS. 1. Certified milk or clean milk fresh from cow; if neither available, Pasteurization. 2. Fresh air. 3. Avoid overheated rooms. In hot weather child should be placed out-of-doors at night on properly screened porch. 4. Avoid overfeeding by giving boiled water to drink. 5. Light clothing and frequent cool bathing. 6. Destroy flies.

TREATMENT. 1. Withhold food for three days; then give barley-water. 2. Have child rest quietly in bed out-of-doors. 3. Wash stomach with boiled water at 100° to 110° F., with a little lime-water added. Before withdrawing tube introduce 2 drams of castor-oil and give thorough colonic irrigation. In cases seen later stomach washing not indicated unless gastric irritability present. After stomach settled give cool boiled water freely by mouth. 4. Colonic irrigations every 4 hours on first day, and later twice daily. Nutrient enemata every 4 hours, following irrigations. Be cautious with cathartics. 5. Tub-bath, lasting 10 to 20 minutes, to control temperature and restlessness. 6. Drugs: Bismuth subnitrate, 1 to 2 drams daily, in a child of one year. Salol, 1 to 2 grains every 3 hours. Opium where pain and continued frequent stools. Brandy in boiled water where prostration; $\frac{1}{2}$ ounce in 24 hours. *Hulse.* 295

Glycosuria. TREATMENT. Glycosuria in elderly persons often results from only a certain few carbohydrates used in excess, especially cane-sugar and wheat-starch. Manage-

ment consists in ascertaining the harmful ones and removing them from diet. Cut off all carbohydrates for a week, and if glycosuria disappears try oatmeal, at first with water containing saccharin or with butter, later with rich cream. Then try potatoes, peas, beans, etc., one by one, examining urine frequently. Open-air treatment of great value. *Vaughan.* Page 296

Goiter, Exophthalmic. ETIOLOGY. Acute rheumatism occupies an important place among infections which lead to development of Graves's disease. *Souques.* 165

Gonorrhœa. TREATMENT. Vaccine therapy caused marked improvement or cure in subacute and chronic cases. Functional results good. *Thomas.* 161

Hæmophilia. TREATMENT. General: Tonics and a liberal diet. Calcium lactate beneficial for a short time, after which coagulation time again lengthens; if the drug be then left off a few days, its effect will again be exerted when resumed. For local hæmorrhages: Sterilized gelatin or adrenalin compresses, or simple pressure; sterilized gelatin solutions injected subcutaneously also effective. For hæmophilic joints: Pressure and absolute rest. Massage over parts slightly distant from joint to be cautiously begun a few days after development of effusion. If hæmorrhage produces great tension in joint, paracentesis of joint followed by injection of adrenalin solution should be the extent of operative interference. Pregnancy in hæmophilic women: Any indication of hæmorrhage warrants induction of labor. If this refused, give general tonic treatment and calcium lactate a day or so before expected confinement. *Larned.* 228

Hæmorrhage. TREATMENT. Adrenal preparations valuable in capillary hæmorrhage from pharyngeal, œsophageal, gastric or intestinal mucous membranes. Mastication of tablets of adrenal substance, or ingestion of 5-grain capsules of same, causes vaso-constriction. *Sajous.* 75

Artificial gelatin made by combining gum arabic with perchloride of iron, then sterilizing the whole, very efficient when injected hypodermically, increasing coagulability of blood more actively than calcium chloride. *Ciuffini.* 292

Hammer Toe. TREATMENT, OPERATIVE. Apply Esmarch bandage. Incision $1\frac{1}{4}$ inches long at outer aspect of plantar surface of toe, with center at flexed joint. Dissect skin flaps laterally and continue incision through subcutaneous structures, avoiding artery and nerve. Dissect flexor sheath free from joint, hold it aside, and remove articulating joint surfaces with chisel. Allow subcutaneous structures to fall back in place, hold them by a few fine buried catgut sutures, close skin incision, and dress. Apply plaster-of-Paris bandage fixing toes in hyperextension, making flexor tendons tense, and holding bony surfaces in apposition. After ten days

split plaster bandage, and expose field of operation. Then restore dressings and keep in original position for six weeks. *Soule.* 352

Heart, Dilatation of. TREATMENT. In asthenic cardiac disorders with dilated right ventricle, dyspnœa and possibly cyanosis and œdema, the adrenal principle improves oxidation and metabolism in the cardiovascular muscles and tissues at large. Tablets of $\frac{1}{2}$ to 2 grains of desiccated gland after meals. *Sajous.* 75

Heart, Neuroses of. TREATMENT. In cardiac irritability: 1. Caffeine citrate and tincture of strophanthus, both best given in tablet-triturate, are promptly effective. Caffeine relieves headache and vertigo when present. Cactus useful in some cases; acts more slowly. 2. Local applications, as cologne, spirits of camphor, ammonia. 3. Light and easily assimilable diet. Avoid meats. 4. Quiet and rest for weeks at a time. 5. Nerve tonic: combined glycerophosphates of lime and soda, gr. v-x *t.i.d.* after meals. 6. Where gastric or intestinal intolerance: milk of bismuth or lactobacilline tablets. 7. To promote sleep: gentle massage of lower limbs before retiring. If hypnotic required, bromural, gr. v-x. *Beverley Robinson.* 163

Hepatic Cirrhosis. TREATMENT OF HÆMORRHAGE IN DIGESTIVE TRACT. Prophylactic: 1. Diet of milk, given only in small amounts, frequently repeated. 2. Avoid all exertions or nervous impressions which might raise tension in portal system. 3. Systematic saline purgation. 4. Leeching, at times, to reduce blood-pressure.—Curative: Hemostatic remedies together with vasoconstrictors or coagulants according to indications. Ergotin, calcium chloride, gelatin injections, and especially injections of fresh antidiphtheritic or other antitoxic serum. *Rauzier.* 353

Hernia. TREATMENT. A truss never cures a hernia in adult life, and rarely during childhood. Losses from disability due to hernia avoided only by early radical operation. *A. C. Wood.* 20

High Enemata. Only where the sigmoid is abnormally developed can a soft rubber tube be introduced higher than six or seven inches in rectum. Short tube six inches long best for all sorts of enemata when using water for fecal evacuation. It is possible to cleanse entire colon by using a short tube of $\frac{1}{2}$ inch caliber. *Soper.* 61

Hyperchlorhydria. DIAGNOSIS. Excess of free HCl alone does not warrant a diagnosis of primary hyperchlorhydria, which shows variable symptoms, both gastro-intestinal and nervous. Though 31.6 per cent. had lost weight, the appetite was generally good and examination of the gastric contents and feces showed that digestive power was but little impaired. The nervous manifestations included periods of depression and mental confusion, irritability, various phobias, numb-

ness, paræsthesias, and attacks of faintness. Male sex and constant mental strain seemed to be predisposing factors. *G. M. Piersol.*

Page 65

TREATMENT. Aluminium silicate in the form of neutralon found effective in all cases of gastric hyperacidity or hypersecretion, whether of neurotic or organic origin,—especially where persistent hypersecretion with motor insufficiency. It reduced acidity, relieved pain and aided digestion. Acts as a protective and astringent to mucosa. Dose, $\frac{1}{2}$ to 1 dram in 3 ounces of water, $\frac{1}{2}$ to 1 hour before meals. *Rosenheim and Ehrmann.*

352

Ileus, Paralytic. **TREATMENT.** Atropine found valuable in 8 cases. Inject 1 milligram ($\frac{1}{64}$ grain) hypodermically and follow shortly after by a stronger dose of 3 to 5 milligrams ($\frac{1}{22}$ to $\frac{1}{12}$ grain). Improvement and abundant fecal discharge within ten hours. *Lederer.*

229

Incontinence of Urine. **TREATMENT.** In persistent or increasing incontinence following labor operation is usually necessary. In the average case the Frank operation, combined with anterior and posterior colporrhaphy and an appropriate operation for retroversion when required, will bring about a cure. In marked dilatation of the urethra of long standing or where the muscular wall of the neck of the bladder and urethra have atrophied, Gersuny's operation offers best hope of cure. *Miller.*

90

Infant Feeding. Salts of cow's milk sometimes cause tendency to convulsions; treat by temporary salt-free diet. Sugar intoxication or intolerance of fats may likewise exist; treat by elimination of these from diet. *Neff.*

24

Intussusception. **TREATMENT.** Lateral anastomosis performed in 2 acute cases and advocated in preference to resection because of its comparative simplicity and safety. Tumor was found to disappear subsequent to operation. Not applicable, however, to gangrenous cases. *Parry.*

125

Iodine. As skin disinfectant. Some hours before operation field is shaved dry and painted with 10 or 12 per cent. tincture of iodine. Dry sterile dressing. Painting repeated on operating table. Author shaves and thoroughly cleanses skin 12 hours before iodine applied. Primary union in every case. *Jewett.*

63

Larynx, Fracture of. **TREATMENT.** Cases divided into three groups according to indications for tracheotomy: 1. Mild cases; fracture often incomplete and detected only on careful palpation. Keep patient under close watch. 2. Serious cases; marked dyspnea, sometimes hæmoptysis. Immediate tracheotomy indicated. 3. Cases of intermediate severity. Preventive tracheotomy should be practised whenever patient cannot be kept constantly under watch. *Michel.*

351

Leprosy. **TREATMENT.** Oil of chaulmoogra is best given as a saponified prepara-

tion, in keratin-coated pills; the purified oil can also be injected in doses of 1 gram three times a week. Nastin injected in doses of 1 cubic centimeter gave good results. Great persistence in treatment, even after relief of symptoms, found advisable. Local treatment by resorcin, hydrogen peroxide, ichthyl, thiosinamine, etc., and baths, also useful. *Kupffer.*

169

Lupus Erythematosus. **TREATMENT.** Constitutional: regulation of diet to avoid overloading intestine; coffee or tea contraindicated; quinine often useful. Local: in hyperæmic stage, cooling lotions and ointment of subacetate of lead, ichthyl lotion or ointment; in chronic cases, strong solution of ichthyl or iodine liniment; in severe conditions, linear scarification or light touches of thermocautery. High-frequency currents in subacute cases, Finsen light, X-rays or radium in chronic cases; particularly useful where thickening of the integument. *Morris.*

63

Meningitis. **TREATMENT.** Early relief from excessive intracranial pressure by means of lumbar puncture advocated in treatment of uncomplicated cases of all forms of meningitis, including tuberculous. Earliest possible recognition of pressure symptoms required, for which purpose total and differential leucocyte counts are of value. Four cases of meningitis reported (including one tuberculous), which recovered after lumbar puncture. *Hultgen.*

298

Meningitis, Cerebrospinal. **TREATMENT.** Lumbar puncture as soon as distinct meningeal symptoms noted, draining away spinal fluid,—the more, the better. Next inject Flexner antimeningococcus serum in spinal canal; quantity of serum should equal but never exceed quantity of fluid drained away. If lumbar puncture yields dry tap, and meningeal symptoms continue, aspirate lateral ventricles, if in an infant, through anterior fontanelle, and if in an older child, by the Kocher method: Shave small patch of scalp and make one-inch linear incision 3.5 centimeters from sagittal line and 5 centimeters anterior to sulcus centralis. Expose bone and perforate it with Doyen perforator followed by a burr, leaving cup-shaped fossa and exposing dura. Gently insert hollow exploratory needle, with blunt point and side-openings, perpendicularly into second frontal convolution; at a depth of 4 to 5 centimeters ventricle is readily found, particularly if distended. If pus present, drain ventricle and then wash with normal saline until fluid returns clear. Inject 20 to 25 cubic centimeters of serum. Repeat this procedure daily until tapping of ventricles is negative. If symptoms of intracranial pressure, as vomiting or convulsions, appear immediately after injection, however, repeat procedure only once in 48 or 72 hours.

Case of an infant two months old reported, in which intraventricular method of treat-

ment led to complete recovery. Infant was fed at the breast, bowel function insured by enemas or an occasional dose of castor oil, and diuresis promoted by giving water. *Fischer.*

Page 129

Metrorrhagia. TREATMENT. Excessive menstrual discharge in young girls, due to blood changes, often arrested by following: Subcarbonate of iron, 0.10 gram ($1\frac{1}{2}$ grains); ergot (Bonjean), 0.05 gram ($\frac{1}{4}$ grain); quinine hydrobromide, 0.01 gram ($\frac{1}{12}$ grain); extract of belladonna, 0.005 gram ($\frac{1}{12}$ grain); two pills before meals. *Huchard and Fiesinger.*

298

Myasthenia Gastrica. TREATMENT. 1. Remove causative factors, as excesses or nerve-strain, if these are evident. 2. Exercise, either out-of-doors, or as special movements to strengthen abdominal muscles. Follow morning exercises with cold shower bath or plunge. 3. Rest in bed for a week, where muscular relaxation marked. If this not possible, use some form of abdominal support, as by Rose's belt of adhesive plaster, to be worn two weeks. 4. Gastric lavage with cool saline solution, not exceeding eight ounces. 5. Mixed diet, consisting of carbohydrates in the form of cereals, toast, rolls and crackers, and vegetables; proteids, as meats, eggs and milk; fats, as butter. Cooked fruits and a little ripe raw fruit allowable. Interdict sweets, and limit fluid intake to 6 ounces with each meal. Avoid overloading stomach at any given time; allowing three light supplementary meals daily, if necessary to secure this end. Patient should lie down for one hour after meals. In severe cases, rectal feeding for a few days. 6. Drugs. The best are strychnine phosphate, gr. $\frac{1}{30}$, extract of ergot, gr. j, extract of coca, gr. ij, extract of physostigma, gr. $\frac{1}{6}$, and hydrastin hydrochlorate, gr. $\frac{1}{4}$, taken fifteen minutes before meals. *Chace.*

356

Nausea, Postanæsthetic. TREATMENT. Olive oil given by mouth in thirty cases of ether anæsthesia, after partial restoration of consciousness. In only one patient was nausea observed after its use. Where nausea had already begun it was at once checked by administration of the oil. *Graham.*

91

Nephritis, Acute. SURGICAL TREATMENT. Case of severe acute nephritis in a man 25 years of age, with no urine passed for 5 days, saved by decapsulation of both kidneys (Edebohl's operation). A few hours after operation both kidneys resumed function. *Karo.*

43

Nephritis in Childhood. TREATMENT. 1. Diet. For two days prohibit all food, giving only 500 or 600 grams (1 pint or 20 ounces) of water, sweetened with table- or milk-sugar, daily. Then give 500 grams of milk and same amount of water. When condition becomes subacute, add carbohydrates, as preparations of flour, potatoes, etc. Add sugar to milk; when distasteful, dilute milk with Vichy, or give it alternately raw and

boiled. Where milk diet not tolerated or results poor, try salt-free diet, omitting proteids and limiting milk to small amounts. Later, if no complications, lean ham, fresh pork, lamb and chicken may be given. Milk should not be taken with meals. 2. Rest in bed and avoidance of exposure. 3. Stimulate skin by general rubbings, gentle massage and tepid baths. Hot pack. 4. Dry cupping, wet cupping, or leeching over triangle of Petit. 5. Systematic disinfection of mouth, nasal fossæ and pharynx, and treatment of skin lesions as possible portals of infection. Where excretory insufficiency appears: 6. Hot air or vapor baths. 7. Drastic purgative, followed by laxative. When signs of intoxication appear: 8. Theobromine, 0.5 gram, at most 0.75 gram ($7\frac{1}{2}$ or $11\frac{1}{2}$ grains) at a dose in child of 10 to 13 years. Powdered squill, digitalis and scammony, 0.025 gram ($\frac{1}{2}$ grain) of each in a pill, given 2 or 3 times daily. If circulation weakens, digitalin or infusion of digitalis. Convallaria or convallamarin. Sparteine in the dose of 0.04 or 0.05 gram ($\frac{1}{4}$ or $\frac{1}{2}$ grain) in the 24 hours. *Hutinel.*

357

Nephritis, Chronic Interstitial. TREATMENT. 1. Diet. Fairly full diet combined with free elimination usually gives best results. A little meat with short fiber (as mutton, chicken) may be allowed at noon, and in morning or evening some fish; vegetable food, preferably farinaceous; milk freely; stimulants prohibited. Urine and general condition of patient should be watched in relation to diet. 2. Hygiene. Freedom from anxiety and overwork; moderate exercise; warm, dry and equable climate. 3. Physical measures. Free sudation by hot-air baths, vapor baths, or hydrotherapy, carefully avoiding renal congestion. 4. Drug therapy. Sodium iodide, gr. xv-xxx; sodium phosphate, gr. xxx-xxv; sodium chloride, gr. xc; water, Oij; to be taken freely as a drink. Purgatives. Where marked anæmia: Basham's mixture or triple arsenates with nuclein. In failing compensation: digitalin combined with a vasodilator, as one of the nitrites (at first in small doses). Veratrine (0.5 milligrams or gr. $\frac{1}{324}$ every half hour until pulse relaxed) is a safe and effective vasodilator for continued use. In bad cases opium in small doses (2 to 4 minims of deodorized tincture) strengthens heart and dilates arterioles. When complications occur, stimulants, diuretics, purgatives and diaphoretics may be indicated. In dyspnoea, quebrachine hydrochlorate or aspidosperme valuable. *Butler.*

171

Neuralgia. TREATMENT. One to two grains of 1 : 1000 adrenalin ointment applied to skin over affected area in neuralgia and neuritis produces ischæmia of the hyperæmic nerves and thus arrests pain. *Sajous.*

76

Obesity. TREATMENT. Strict vegetable diet for 4 to 6 weeks, then 150 to 200 grams of lean boiled meat 3 times a week or once

daily. This diet kept up for months, and tends to protect from returning corpulence. If weight begins to increase, drop meat again for 4 to 6 weeks. Such diet best corrects obese tendencies without impairing general health. Supplement by exercises and hydrotherapeutic measures. *Albu.* Page 25

Osteomalacia. TREATMENT. In a case of non-puerperal osteomalacia, after two years in bed and failure of all other measures, suprarenal extract given according to Bossi's technique. From 8 to 10 injections of 1 cubic centimeter made each month. By the thirtieth injection great improvement was manifested, and in time the entire syndrome arrested, with almost complete restoration of function. *Bernard.* 92

Otitis Media, Chronic. TREATMENT. Perhydrol in 2 to 6 per cent. solution found useful. Patient drops solution into ear and remains on side for 10 minutes; auricle is then dried and cotton inserted in meatus. Where much suppuration, repeat morning and evening. Inspissated pus is dislodged, and cholesteatoma also yields. *Bresgen.* 125

In late stages:—If tube diseased: inflation, with bougieing if stenosis exists. Intratympanic injections of menthol oil, iodine solutions, pilocarpine, menthol giving best results. Where fixation of the ossicles: pneumomassage; injection of fibrolysin sometimes valuable. Operative measures: mobilization of the malleus, synechotomy and tenotomy of the tensor tympani, eventual excision of the malleus and incus. *Yearsley.* 61

Case of subacute otitis media, complicated by suppuration of ethmoid sinus, in which hexamethylenamin (5 grains t. i. d.) caused rapid and marked improvement. *E. J. Brown.* 353

Antiseptic vapors of kelyvolin, a dark, oily liquid, used in treatment of septic conditions of tympanum, attic and mastoid antrum and cells; it is forced into these cavities by means of a special volatilizing inflator inserted into the external meatus or adapted to a Eustachian catheter. Anæsthetic property of the vapor precludes pain from heat liberated. Meatus and tympanic cavity to be carefully cleansed and dried before introducing the vapor. Treatment usually given every third day. Causes rapid diminution of discharge, improvement in hearing and in general condition. *Stuart-Low.* 362

Patella, Fracture of. TREATMENT. In all compound fractures, prompt operative intervention is demanded. In subcutaneous fractures, operation may be deferred from 3 to 5 days. In the interval flexion is prevented by a posterior plaster-of-Paris splint, and absorption of fluid hastened by compression with gauze or elastic bandages. In operating, prepatellar fibroperiosteal tissues must be sutured, and all tears in soft tissues surrounding patella carefully repaired. To assist in maintaining apposition of bony fragments, patella is circumferentially looped

by a ligature passed close to its periphery and imbedded in the quadriceps tendon and ligamentum patellæ midway between their anterior and posterior surfaces. Where separation slight and prepatellar tissues practically un torn, procedure may be limited to looping fragments and fortifying prepatellar tissues by V-shaped kangaroo tendon sutures, without entering joint-cavity. Otherwise, all fluid and clots in joint and subquadricepsal *cul-de-sac* may be removed by gauze swabs mounted on artery forceps; irrigation inadvisable. While patient still under anæsthesia, apply moulded and padded plaster-of-Paris splint covering posterior and lateral surfaces of limb, with leg in full extension and thigh slightly flexed. This splint is to be used for about a month. First motions of patella should be lateral. Begin cautious flexion of knee one month after operation. *Heineck.* 114

Pelvic Inflammation. TREATMENT. Abscess. Simple vaginal incision with drainage; if condition becomes worse, abdominal section, by extraperitoneal method if possible, should be attempted. *Esch.* 62

Hot mud compresses over abdomen recommended in chronic exudative adnexal inflammations and pelvic exudates. The heat is much better borne than in hot-water applications, and 10° C. greater heat can be applied. If surface be covered with woolen cloths, heat retained for several hours. Causes hyperæmia and promotes removal of exudate. Contraindicated in acute cases. *Cukor.* 63

Pemphigus. TREATMENT. Quinine in large doses used in two severe cases with pronounced benefit. One patient was given 23 grains daily for two weeks, then 31 grains daily. No tinnitus, vertigo or vomiting resulted. *Bergrath.* 230

Pericarditis. ETIOLOGY. Myocardial degeneration, leading to dilatation, predisposes to pericarditis. Overaction of heart may induce pericardial inflammation. Chronic adhesive pericarditis frequent but often impossible of diagnosis, serious symptoms arising only when myocardium itself is diseased. *Brooks and Lippencott.* 26

Peritonitis. PROGNOSIS. Degree of improvement in circulation caused by intravenous saline infusion is an index of the extent of vasomotor paralysis, the effect persisting in proportion to recuperative power of vessels. If infusion causes no circulatory improvement little benefit can be anticipated from operation. *Lichtenberg.* 126

TREATMENT. Restrict the amount of tamponing and never insert a tampon between loops of intestine. Fowler position always exerts favorable influence. *Dege.* 64

Measures recommended for inhibition of peritonitis: 1. Gastric lavage immediately, where nausea, vomiting or gaseous distention (except where peritonitis follows perforation of stomach or duodenum). 2. Rectal instilla-

tion of normal saline by drop method, continuing for 1 to 2 hours, then interrupting for 2 hours. Where this method not practicable, give 500 to 1000 cubic centimeters of saline solution subcutaneously, repeating as required to relieve thirst and keep vessels filled. 3. Fowler position. 4. Large, hot, moist dressing of saturated boric acid solution and alcohol in equal parts applied to abdomen. 5. Give no cathartics or food by mouth; even prohibit water till patient on way to recovery. Feed by enemata consisting of 1 ounce of concentrated liquid food in 3 ounces of normal saline; add 10 to 50 drops of deodorized tincture of opium to each feeding till no longer painful. Administer slowly every 3 or 4 hours through rubber catheter introduced not more than 3 inches. *A. J. Ochsner.*

Page 360

Peritonitis, Tuberculous. TREATMENT. Air injected in peritoneal cavity after paracentesis in three cases of the exudative type, with recovery. After removal of exudate by trocar, air is forced in by emptying water from a large syringe into the aspirator jar. *Florio.*

238

Phenolphthalein. Acts in about 6 hours and has no constipating after-effect. Sometimes loses its effect on continued use, and may cause diarrhœa. Dose: 3 to 5 grains *t.i.d.*, in powder, pill or capsule. Five grains are probably the largest safe dose. In a child, begin with $\frac{1}{2}$ grain. *Gilbride.*

172

Placenta, Premature Detachment of Normally Situated. TREATMENT. Rupture of membranes and rapid delivery not to be done till uterus contracting, patient rallied, and os somewhat dilated. Where no contractions, no dilatation, and patient in collapse, use tampon and binder until patient and uterus have recovered. This enables uterus to withstand pressure of blood within it and so controls hæmorrhage. *Goldstine.*

300

Pleural and other Effusions. TREATMENT. To prevent recurrence, after aspiration, of serous effusions into the pleura, peritoneum, tunica vaginalis, etc., 8 minims to 2 drams (according to size of cavity) of suprarenalin or adrenalin in four times the quantity of saline solution may be injected into the cavity. *Sajous.*

76

Strong galvanic currents employed in serous effusions, using as positive electrode a cotton wad soaked in 10 per cent. sodium bicarbonate solution and as negative electrode one soaked in 5 per cent. tartaric acid. Daily applications of one hour, with current of 15 or 20 milliamperes, gradually and cautiously increased up to 50 or 60. Fluid promptly reabsorbed in many cases of peritoneal, pleuritic and even pericardial effusion. *De Renzi.*

234

Pleurisy, Syphilitic. DIAGNOSIS. All serous exudations in syphilitics cause deviation of the complement; hence a diagnosis of syphilitic pleurisy, as distinguished from

pleurisy of other origin in a syphilitic, must be based on data other than the serum reaction. *Roger and Sabarbanu.*

173

Poliomyelitis, Epidemic. PROPHYLAXIS. Nasal and buccal secretions should be disinfected. *Flechner and Lewis.*

231

Puerperal Infection. LOCAL TREATMENT. In ulcerative endometritis, vaginal douching and drainage of uterine cavity. Where retained material with normal temperature, or where serious hæmorrhage, prompt evacuation of uterine cavity. Where moderate fever and general condition good, delay interference a few days to a week, awaiting spontaneous evacuation. Where high fever or severe toxic symptoms, especially if virulent streptococci in vaginal discharges, curet. If symptoms of extra-uterine infection, strictly avoid curet- tage (unless serious hæmorrhage). Curettage, where indicated, best done with finger. *Wint- ter.*

300

Pyelitis in Infants. DIAGNOSIS. Of 9 cases in children ranging in age from 9 months to 2½ years, 6 had high fever; 5, frequent micturition; 3, chills; 1, pain, and 1, tenderness in lumbar region. None vomited. Diagnosis depends on urinary findings; pus, epithelial cells, occasionally blood-corpuscles, and no casts.

TREATMENT. Urotropin, $\frac{1}{2}$ to $\frac{3}{4}$ grain every two hours, very effective. *Gray.*

174

Pyloric Spasm of Infants. TREATMENT. High rectal instillations of Ringer's fluid (sodium chloride, 7.5 grams; potassium chloride, 0.42 gram; calcium chloride, 0.24 gram; boiled water, 1 liter) gave good results. Half a liter of solution is introduced in 2 hours, and the procedure repeated morning and evening. Vomiting ceases after a few days' treatment. *Rosenstern.*

232

Radium. Permanent radium emanations can be established in certain organs, the blood, or the whole body, at will, by injecting finely divided radium sulphate suspended in saline solution isotonic with blood. Therapeutic results obtained: 1. Relief of pain in malignant growths, deep infections, tuberculous meningitis, etc. 2. Diminished inflammatory œdema around malignant growths, tuberculous lesions, infected glands, etc. 3. Occasionally general improvement in tuberculous patients. 4. Retrogression of benign growths, as keloids. *Dominici.*

361

Rheumatic Heart Disease. DIAGNOSIS in children. 1. Subcutaneous nodules generally indicate active cardiac disease. 2. Evening fever without previous cause suggests fresh cardiac inflammation. 3. Joint pains. 4. Sudden appearance or increase in anæmia. 5. Persistently frequent pulse. *Carr.*

26

Septicæmia. TREATMENT. In the presence of persistently low blood-pressure, hypothermia, and cyanosis, adrenalin is valuable when very slowly administered intravenously in the proportion of 5 minims of the 1:1000 solution to a pint of warm saline solution (105°

F.). It enhances pulmonary and tissue respiration and the activity of the immunizing process. *Sajous*. Page 75

Collargol found valuable in septicæmia and pyæmia of medium gravity, as well as in obstinate febrile states due to reabsorption of toxins and associated with anæmia. Should be given in all cases of puerperal infection. It is best administered by slow intravenous injection of 1 to 2 c.c. of a 5 or 10 per cent. suspension. Probably acts as a catalytic, accelerating oxidation. *Albrecht*. 234

Shock. TREATMENT. Suprarenalin or adrenalin, very slowly administered intravenously; 5 minims of the 1:1000 solution to the pint of warm saline solution (105° F.). In urgent cases, 10 drops may be given in 1 dram of saline solution. Artificial respiration hastens effects. *Sajous*. 75

Shock, Postoperative. PROPHYLAXIS. Pituitary extract (1 cubic centimeter of 20-per-cent. solution of posterior lobe) was injected in three cases before complete recovery from the anæsthetic, in conjunction with normal saline by rectum. The pulse, previously barely perceptible, almost at once became large and bounding, slow, and regular, this effect lasting 12 to 16 hours. *Wray*. 93

TREATMENT. In shock after abdominal operations, remove two skin-sutures near navel and insert glass tube joined by rubber tubing to receptacle containing saline solution at 112° F. Pass the tube upward beneath omentum and transverse mesocolon to region of solar plexus, and run in one pint of hot saline, causing rise of blood-pressure by heat and pressure stimulation of sympathetic system. Remove tube, cover wound with gauze, and apply binder to sustain pressure. Inject 10 ounces of hot saline in rectum every 2 hours. *Hopkins*. 159

Sinus Disease. TREATMENT. Case of chronic suppuration of antrum in which the discharge and subjective symptoms were greatly relieved by 5-grain doses of hexamethylenamin three times daily. *E. J. Brown*. 353

Skin Growths and Ulcerations. TREATMENT. Powdered potassium permanganate used as a caustic for benign and malignant neoplasms, lupus, keloids, chancroids, cavernous angiomas, etc. Surrounding healthy skin is protected by rings of adhesive plaster piled one over the other, with central opening slightly larger than area to be cauterized. Powdered permanganate is then poured in and covered over with adhesive. After 48 hours, a softened mass alone remains of the growth. Upon removing this a sharply-defined depression is revealed, which heals rapidly. The procedure is usually painless. *Finck*. 232

Splenic Enlargements, Primary. TREATMENT. Iron, arsenic, iodine, glandular and marrow extracts have only a temporary or uncertain action in these conditions. X-rays

cause general improvement in Banti's disease, and should be projected over the spleen through an aluminium screen. Except in infantile splenic anæmia, splenectomy is, however, often preferable in that it yields lasting benefit. *Bozzolo*. 175

Stricture of Urethra. TREATMENT. OPERATIVE. Median incision down to urethra, dividing structures of bulb in median line. Divide stricture by longitudinal incision 1½ inches long. Remove excess of scar tissue, or excise whole strictured portion if necessary. Mobilize anterior segment of urethra and join to posterior segment without tension, sutures being passed from without inward. If roof of canal has been left intact, bring together margins of longitudinal incision transversely, as in pyloroplasty. When ¼ of circumference sutured pass No. 28 sound into urethra; complete the sutures around it. Open urethra on the sound at a point as far behind stricture as possible and introduce No. 12 (English) soft-rubber catheter. Suture wound in layers, leaving space at lower angle for catheter. Resection applicable to all strictures of bulbomembranous portion not amenable to gradual dilatation and not complicated by infiltration of urine or fistulas. *Cabot*. 126

Suprarenin. Poisonous dose varies with the individual. Danger arises from: 1. Concentration of solution used. Large amount of a weak solution is without danger. 2. Method of introduction. Intravenous injection gives immediate bad effect; locally or subcutaneously it is well borne. Author employs solution of 0.64 gram suprarenin borate in 100 cubic centimeters of 0.5 per cent. novocaine, made up fresh from tablets for each operation; 125 cubic centimeters of such solution used without danger. *Braun*. 127

Syphilis. TREATMENT. Mercurochrome found useful to alternate with the protiodide and in cases where the ordinary preparations of mercury cannot be assimilated; gr. j three or four times daily. Author advocates course of twenty inunctions of the official ung. hydrarg. at the outset of every case of syphilis, before beginning internal administration. Where latter causes serious gastro-intestinal disturbance, and the symptoms of the disease are marked, inunction treatment is to be adopted. Course of three weeks of inunctions in the spring and fall for four or five years recommended. In cases of ulcerating tubercular syphiloderma and gummata best results obtained using potassium iodide (gr. x-xx *t.i.d.*) along with mercurial inunctions twice daily. Mercury is as valuable in tertiary as in secondary syphilis. *Christian*. 45

Tabes. TREATMENT. Strychnine in gradually increasing doses arrested progress of the condition in almost all cases. Begin with 1/30 grain *t.i.d.*, increase to 1/20 at end of first week, to 1/10 at end of second, then add one drop of a solution of 1 grain of strychnine in 1 ounce of water. Increase by a drop every day till total dose is 1/8 grain *t.i.d.*, which is

maintained for 3 months. Then increase as before until $\frac{3}{16}$ is reached, maintain for 3 months, etc. Maximum dose of $\frac{1}{2}$ grain being reached, it is maintained for a year, then gradually reduced. Results obtained: pains disappeared, bladder and bowel control regained, locomotion much improved; general amelioration. *Hammond.* Page 236

Tetanus. PROPHYLAXIS. While 1500 units of antitoxin will prevent tetanus in wounds without severe mixed infection, it may fail when used only once when there is mixed infection lasting over 10 days. In such cases antitoxin should be repeated every week while infection lasts. *Rouan.* 364

Tetany. TREATMENT. Infundibular extract (20 per cent.) of Burroughs, Wellcome & Co., recommended; given by intramuscular injection in doses of 7 drops *t.i.d.*, or oftener. If used subcutaneously it might cause necrosis of skin by vasoconstriction. Not poisonous. *Ott and Scott.* 99

Tetany, Gastric. TREATMENT. Soluble calcium salts rapidly control symptoms in the tetany of gastrectasis; continued use required. Large saline infusions, as well as parathyroid preparations (nucleoproteid) by the mouth, are but slightly effective. *Kinnicutt.* 123

Tic. DIAGNOSIS. True tic, which is of psychic origin, and is a sequel to the unhindered repetition of a once voluntary purposive act, is distinguished from spasm, which is due to irritation of any reflex arc of the bulbospinal tract, as follows: 1. Movement slower. 2. Occurs in volleys. 3. No muscular weakness. 4. Reflexes normal. 5. Painless. 6. Disappears in sleep. 7. Pseudo-coördinate and intentional. 8. Influenced by volition or emotion, and followed by satisfaction. Upon this distinction depends whether treatment shall be surgical, medical or psychotherapeutic. *T. A. Williams.* 5

Toxæmia of Pregnancy. TREATMENT. Failure of thyroid gland to hypertrophy during pregnancy probably related to toxæmia. Administration of thyroid beneficial by supplying this deficiency and by diuretic action. Saline extract of fresh human thyroid proteids more rapid and reliable in action than ordinary sheep thyroids. Hypodermic use of thyroid proteids greatly superior to oral use. *Ward, Jr.* 27

Traumatic Neurosis. DIAGNOSIS. In response to galvanism the anodic closure contraction equals or surpasses the cathodic closure contraction, as in the reaction of degeneration, but in tracings of muscular contractions the peaks are not rounded as in the reaction of degeneration, but sharp and angular as with normal contractions. Increased excitability is observed on both affected and sound sides. *Larat.* 124

Tuberculosis, Pulmonary. DIAGNOSIS. X-ray method contributes to early diagnosis. Where symptoms point to pulmonary lesion but no physical signs are demonstrable,

radiography may show peribronchial infiltration or enlarged bronchial glands. Later, consolidated areas and cavities can be accurately located at any depth within the lung. *Leonard.* 177

TREATMENT. Mercury succinimide administered hypodermically in 8 cases caused general improvement and appeared to exert a marked controlling influence over the tuberculous process. *Freeman.* 90

Beechwood creosote given both internally and by inhalation affords much relief to symptoms in nearly all cases and in all stages. It is also valuable as a preventive in those predisposed or exposed to the infection. Rest, fresh air, proper food, with or without lime salts. *Beverley Robinson.* 23

Menthol ointment (30 or 40 per cent.) used with benefit. It is rubbed in daily for 10 minutes, skin of back, chest and thighs being successively employed. Improvement manifest alike in symptoms and physical signs. Probably acts directly on involved tissues. Treatment should be persisted in for 4 months or more. Also valuable in old fibroid pneumonias. *Stcpp.* 238

Early tuberculosis treated by antiseptic inhalations with remarkable results. Solution used: Phenol, creosote, spirits of chloroform, of each 8 cubic centimeters (f3ij); tincture of iodine, spirits of ether, of each 4 cubic centimeters (f3j). Of this 6 to 8 drops are poured on the felt or sponge of Yeo's perforated zinc inhaler, and inhaled regularly every hour in the daytime, as well as 2 or 3 times during the night, when patient is awake. Cough is thereby relieved without sedatives and expectoration facilitated. Where hæmoptysis, add turpentine to the solution. In all cases patient should rest in bed for a week, with windows of bed-room open. In second week he may rise for an hour or two daily, and later walk in the open air every morning. When temperature is normal, use of inhaler may be gradually left off. *Lees.* 93

Tuberculosis, Superficial. TREATMENT. Mercury succinimide (gr. $\frac{1}{8}$ subcutaneously every other day) with mercury protiodide (gr. $\frac{1}{4}$ by mouth *t.i.d.*) gave good results in two obstinate cases of scrofuloderma and one of pharyngeal infiltration. Curetting, cauterization and X-rays ineffective until mercury added. *Hertzberg.* 25

Typhoid Fever. INTESTINAL PERFORATION. Mortality after operation for perforation in children is below 50 per cent.—25 per cent. lower than in adults. *Jopson and Gittings.* 25

RUPTURE OF SPLEEN. This accident occurs most frequently in beginning of the third week, or in convalescence. The enlarged typhoid spleen should be merely touched daily, not handled. **PROPHYLAXIS:** Ice-bag to the spleen. **DIAGNOSIS:** Preliminary pain under left costal arch, sudden increase of pulse-rate by 20-30 beats, evidence of internal hæmorrhage, followed by rapid rise of temperature; liver

dulness not obscured; X-rays. TREATMENT: Immediate saline infusion and Fowler's position, splenectomy, followed by continuous peritoneal lavage with two glass tubes, below diaphragm and above pubis. *Bryan.* Page 28

TREATMENT. Alcohol compresses to the abdomen in children advocated in preference to the cold tub-bath treatment, which author regards as favoring hæmorrhage or perforation and as liable to work injury to the heart. Compresses used in 12 severe cases which were rendered milder. Pad of absorbent cotton or eight thicknesses of gauze wrung out in 85 per cent. alcohol (90 per cent. for adults), applied to abdomen, covered with cold-water gauze compress, and held in place by flannel band. Water compress renewed every hour, alcohol compress every 2 hours. Acts by local active hyperæmia, while alcohol absorbed stimulates heart. Used also in peritonitis and appendicitis with benefit. *Cheinisse.* 122

Ulcer of Leg, Syphilitic. TREATMENT. Reduce alcohol consumed. Mercury and iodides, preferably organic iodides, well diluted, alternated with courses of strychnine particularly when ulcer again becomes sluggish. General antiseptic application: Boroglyceride 3j, hot water Oss. Locally, black or yellow wash; solution of phenol (1 to 100); tincture of iodine (1 to 4 or 5 of hot water); ammoniated mercury or yellow oxide ointments. Dry treatment: Zinc oxide 3iij, calomel, 3ss, infusorial earth q. s. ad. 3j. X-rays have benefited some cases. Where ulcer resists cure due to tethering of its edge to underlying bone, apply antiseptic fomentations, scrape ulcerated surface with Volkmann's sharp spoon, undercut edges with scalpel, and draw them together, freshening skin-margins. *W. Evans.* 23

Uncinariasis. DIAGNOSIS. In mild cases eosinophilia is often not available for diagnosis. Following method recommended: Dilute fecal material ten times with water and centrifugate at high speed for 6 or 8 seconds. Pour off supernatant fluid, shake sediment with water, and centrifugate again just long enough to throw eggs to bottom (usually 2 seconds). Repeat once or twice, remove sediment with pipette and examine for eggs. Calcium chloride solution assists in removal of debris. Large amounts of feces may have to be examined before eggs discovered. *Bass.* 168

Vomiting in Infants. TREATMENT. Condition often a mere habit, vomiting reflex being established owing to former injudicious feeding. Administer chloral, bromide or chloretone until habit is broken; or better, exhaust the vomiting center by giving harmless emetic, as wine of ipecac and carbonate of ammonium, half an hour before feeding. Latter method used in 55 cases; immediate cure in 30, and improvement in 10. *Pritchard.* 239

Vomiting of Pregnancy. TREATMENT. Adrenalin used with success in a case previously uncontrollable. Ten drops of 1 to 1,000 adrenalin solution given morning and night, at first in enema of 150 grams (5 ounces) water with 20 drops of laudanum, after 3 days in ice-water by the mouth. Nutrient enemas also given. Vomiting ceased on second day, and on third patient could retain a little food. Recurrence of nausea toward end of pregnancy relieved by 10 drops daily for 5 days. *Rebaudi.* 94

Vomiting, Postoperative. TREATMENT. Where nausea, vomiting or gaseous distention after abdominal section, employ gastric lavage, which often checks incipient peritonitis. Spray pharynx with 2 per cent. cocaine solution 10 minutes before tube introduced. *A. J. Ochsner.* 360

Wassermann Reaction. Positive reaction often noted in cases of leprosy giving no history or symptoms of syphilis, chiefly in the tubercular and mixed forms of the disease (31 out of 38). In cases of the maculo-anæsthetic and purely trophic type it is usually negative (3 positive out of 22). *H. Fox.* 355

Whooping-Cough. TREATMENT. Oxygen used in 30 cases. It is given at each paroxysm. Cyanosis subsides and suffocation is prevented. Child keeps in good condition with appetite throughout. It is best inhaled through a funnel; 10 to 12 liters necessary to control a paroxysm. Where broncho-pneumonia threatens, oxygen should be inhaled every hour; it renders lung aseptic. *Weil.* 64

Quinine salve applied to nasal mucous membrane with benefit. Used 1 to 2½ grams of quinine in 10 to 15 grams of lard (30 grains to 2 drams in 1 ounce), and introduced piece of salve size of pea into each nostril 3 to 4 times daily with glass rod, head being thrown back. Symptoms much improved after 3 or 4 days. Especially effective in very young children. *Berliner.* 301

Book Reviews

A MANUAL OF NATURAL THERAPY. By Thomas D. Luke, M.D., F.R.C.S., Lecturer at the University of Edinburgh, etc., Fellow of the British Balneological Society, etc. With 30 Plates and 25 Illustrations, many of which are original. New York: William Wood and Co., 1908. \$2.50.

In these days of rampant drug nihilism, based as this is upon a pitiable ignorance of many well-established facts, the public naturally reaches out hopefully for physiologic measures of cure which can be relied on. The danger is that the medical profession shall suffer unwarrantably by reason of its own blunders, outrageously exaggerated by ignorant people. Hence it behooves the conscientious practitioner to make himself familiar with the subject of personal hygiene, which, being inadequately taught in the schools, is little understood by the profession. Consequently the public runs after false gods, welcoming impossible promises of charlatans, and especially such painful exhibitions as those of the Eddyites and their confiding followers. From the use of such a book as this physicians can in a short time learn much that will be of lasting benefit to themselves and their clients. To be sure, many of the measures recommended require special equipments not always obtainable. But it is none the less necessary for the practitioner to know precisely how definite results can be reached through these channels. There is very much in the book, moreover, which any country doctor can readily adapt to his needs by the expenditure of some resourcefulness and common sense.

We have here chapters on the use of heat, of light, massage, electricity; on diet and several of the modern cures. The data have been carefully sifted, well considered and clearly presented.—J. M. T.

THE EXAMINATION OF THE FUNCTION OF THE INTESTINES BY MEANS OF THE TEST DIET; Its Application in Medical Practice and its Diagnostic and Therapeutic Value. By Prof. Dr. Adolf Schmidt, of Halle. Authorized Translation from the Second German Edition, by Charles D. Aaron, M.D., Professor of Diseases of the Stomach and Intestines in the Detroit Post-Graduate School of Medicine; Clinical Professor of Gastro-Enterology in the Detroit College of Medicine. Octavo of viii + 126 Pages, with 3 Colored Plates. Philadelphia: F. A. Davis Company, 1909. Cloth, \$1.50, net.

This volume is based on a series of lectures delivered by Prof. Schmidt in the summer of 1903 and sets forth the practical results of investigations on this subject covering a period of eight years. The original desire of the author was to work out a practical method for the examining into the intestinal functions, analogous to that already in vogue for the stomach contents, and this plan he has carried out as far as circumstances would permit. His method of utilizing the test-diet having been widely adopted, the details of his pioneer work in this line are now being published in other languages. A Russian translation and the present English version have now appeared. The book is divided into seven parts, in which the subject is dealt with as follows: 1. The examination of the function of the intestine. 2. The test-diet. 3. The examination of the feces, macroscopic, microscopic, chemic, and bacteriologic. 4. The semeiotic significance of pathologic findings in the feces. 5. Complementary methods and further problems of the functional examination. 6. Intestinal disturbances due to the stomach, the liver and the pancreas. 7. Independent disturbances of the intestines, organic and functional. It should prove of great value to those interested in this line of work.

PRACTICAL HYDROTHERAPY. A Manual for Students and Practitioners. By Curran Pope, M.D., Professor of Physio-Therapy, University of Louisville; State Secretary, American

Physio-Therapeutic Association; Associate Editor, Kentucky Medical Journal, etc. Cincinnati: Cincinnati Medical Book Co., 1909.

Dr. Pope has given the profession an excellent and thorough presentation of hydrotherapy. This forms a valuable contribution to the subject of non-pharmaceutic therapeutics, which is only beginning to be appreciated in America. He cordially acknowledges indebtedness to the great European scientific pioneers in this line, and pays personal tributes to Winternitz and others. Likewise he extols the teachings of Simon Baruch and J. H. Kellogg in America. It would be tempting to review the book so fully as to give readers a fair conception of not only the practical utility, but also the ready availability of hydrotherapy. We can only urge them to study the subject as Dr. Pope has presented it; to learn the physiologic and other reasons he adduces so clearly and forcefully, and to adapt the measures explained in daily work. Those who can secure the co-operation of such a well-equipped institution as Pope's Sanatorium, Louisville, Ky., or those at Battle Creek, Mich., Danville, N. Y., and Watkins Glen, N. Y., will get admirable results for their patients. Those who prefer to do their own hydrotherapy can get excellent results learning the principles, the genus and differentia from Dr. Pope's book.—J. M. T.

ROTUNDA MIDWIFERY FOR NURSES AND MIDWIVES. By G. T. Wrench, M.D., late Assistant Master Rotunda Hospital, with an Introduction by the Master of the Rotunda Hospital. Pp. 324, with Illustrations. London: Oxford University Press, 1908. Cloth, \$2.00.

Any work originating from the world-wide known Rotunda Hospital is of especial value. This applies particularly to the present little book intended for midwives and nurses. Although some of the illustrations are somewhat crude (*vide* that of the Trendelenburg position, page 222, for instance), they clearly depict the various phases of the subject as a whole.

The opening chapters deal with the anatomy of the pelvis and the physiology of pregnancy. The remainder of the book is devoted to the management of labor, normal and abnormal, the complications and sequelæ likely to be encountered, infant feeding and the care of the infant. The teachings do not agree in many instances with those we are accustomed to, but this does not prove that our methods are the better.

THE THERAPEUTICS OF RADIANT LIGHT AND HEAT AND CONVECTIVE HEAT. By William Benjamin Snow, M.D., Editor of the Journal of Advanced Therapeutics, late Instructor in Electro-therapeutics in the New York Post-Graduate School, etc. Octavo of 119 Pages, with 15 Text Illustrations and 8 Plates. New York: Scientific Authors' Publishing Company, 1909.

In view of the recommendation of the Committee of the American Medical Association that instruction upon the use of remedial agents other than drugs be given in our schools, Dr. Snow's little work will serve an excellent purpose, being intended not only for practitioners but also for students. In the short space afforded by 110 pages, the author considers the following subjects: Sources of Radiant Energy; Physiological Effects of Radiant Light and Heat; Practical Methods of their Application; Treatment of Simple Inflammation; Radiant Energy in the Treatment of Infection; Radiant Energy in Dermatology; Radiant Light and Heat in Conditions Associated with Faulty Metabolism; Opposite Effects of Radiant Light and Heat and the Roentgen Ray; Comparison of Convective Heat and Radiant Heat; Physiological Actions of Convective Heat; Administration of Dry and Moist Heat; Therapeutics of Convective Heat.

Each chapter begins with a clear, though brief, review of the physiological action of the various forms of radiant and heat energy recommended; this is followed by a cursory review of the disorders in which they are indicated, with illustrative cases in many instances to support the claims made. On the whole, Dr. Snow's little work fulfills very satisfactorily the purposes for which it was intended.—C. E. DE M. S.

The General Field

The Doctor and the Parcels Post

If a resident of Sydney, Australia, desires to send a package of most any conceivable shape to Bangor, Maine, and it does not exceed eleven pounds in weight, it will cost only 12 cents per pound for the ten-thousand-mile journey. But if the resident of the United States chooses to send merchandise by mail to even the nearest town, it will cost exactly $33\frac{1}{3}$ per cent. more for the privilege.

Probably ninety-five enlightened citizens out of every hundred have noted this discrimination with more or less indignation, but the express companies, naturally jealous to perpetuate their monopoly, and the country merchants who fear the competition of the mail order houses, have been able for twenty years or so to defeat the wishes of the great majority of citizens. However, if the citizens should by some chance or other conclude to bestir themselves, they could get the parcels post privilege in short order. It looked a few weeks ago as if there would be no legislation worth mentioning this session, but when Congress adjourned a very few weeks later the members and senators were all patting themselves on the back. The real facts are that the mutterings of disgust among their constituents became very audible at Washington, D. C., and the servants (occasionally) of the people proceeded to get busy.

Now, wouldn't it be worth while, just at present, when congressmen are all looking over their prospects for re-election, to ask them a few leading questions about this parcels post matter? There is no time when a great statesman is

more approachable than shortly before the elections take place. No one would be benefited more by a parcels post system than the doctor, and no one could interrogate the prospective congressman with more justification or with more probable effect, all being taken into consideration.

By their recent rulings the express companies evidently consider that their privilege is to be a perpetual one. This all depends upon just when the average intelligent citizen decides to demand in no uncertain tones the enactment of a parcels post law. Whenever that time arrives dividends on express company stocks will probably be considerably less than the present 30 or 40 per cent.

Now is one of the best times we will ever have to demand a parcels post law. Why not get about it?

The Carnegie Foundation Report on Medical Education

Mr. Abraham Flexner has stirred up a very animated discussion among physicians and medical teachers by his report of the present status of medical education in this country with concrete examples of the facilities of the different institutions. Much that he has written is of a very uncomplimentary character, and human nature would have to be very materially modified if such a wholesale condemnation did not arouse a great deal of resentment.

If the measure of a student's capacity in later life was to be determined by the "facilities" of the educational institutions he attended, there could be only one conclusion to be drawn from Mr. Flexner's report, and that would be that

all the smaller medical schools should be abolished and a few—the fewer the better—mammoth universities established in which medical education could be imparted with a maximum degree of system and efficiency.

This same method has been adopted to a considerable extent in the high school systems which have become established throughout the country, but already the tendency is to decentralize the high schools, splitting them up into branches distributed in accessible sections of the large cities. Some very well informed people have written with a great deal of logic protesting against the sending of a boy to one of the great universities for a four-years' course when it was yet possible for him to secure the special individual attention and personal co-operation of his teachers in one of the few, small, old-time colleges yet remaining.

A very dull individual with a faculty for storing away "book learning" can acquire an elaborate education at a richly endowed and highly equipped medical school, and be graduated with highest honors, and yet be a most pitiable failure in the practice of medicine. On the other hand, there are plenty of instances of the young man with much lower marks in the class room, but who seemed to have a peculiarly practical knack of things in the clinics and who developed a judgment that made him the reliance of his colleagues for miles around when he was fairly established in practice.

It is not likely that the sum and substance of all that should pass as wisdom is contained in Mr. Flexner's report on medical teaching. After all, it is the old question of a choice between a considerable number of small institutions with personality at a premium, or a few mam-

moth organizations with organization as the keynote. We believe the tendency of the times is to preserve the individuality at the cost of the greater facilities, provided that a choice must be made.

Eternal Vigilance Necessary

Some of the governors and members of Congress and other representatives of the different commonwealths and congressional districts seem to have lately developed a remarkable indifference as to the wishes and interests of the medical profession.

When a committee representing the New Jersey State Medical Society visited the governor of that State to protest against legislation which they considered to be very detrimental to their interests and that of the commonwealth in general, they were treated, according to report, with great discourtesy. In pleasing contrast with this, however, is the attitude shown by Governor Harmon, of Ohio, in checkmating the well-laid plans of the "optometrists," who seem, however, in New York State, to have carried their point.

It is evident that the privileges incident to the practice of medicine will be very much curtailed unless that profession remains constantly on the alert to protect its interests.

A Summer Course in Nature

Those who believe that every adverse experience brings with it its own corrective and eventually tends to elevate the race can take courage from the recent discussion of advancing food prices. A great many people who had no interest whatever in rural life a few years

ago have recently found the farm problem an engrossing study.

A greatly increased number of families will look for recreation and health this summer among the farms. They will watch the various agricultural processes with an entirely new interest, and they will attach a greater significance than ever before to the well-known words of Goldsmith:

"Ill fares the land, to hastening ills a prey,
Where wealth accumulates and men decay."

A thousand families may live under unhygienic conditions and children grow up without even the reasonable comforts, to say nothing of a fair start in life, in order that one family, or possibly two or three, who secure the lion's share of the profits of a manufacturing enterprise may have a surfeit of luxury. This is a condition which is so aptly described by the above quotation.

It now looks as though agriculture would come into its own again, and the more the subject is discussed and the more people start out to spy out the agricultural regions in their vacations, the better will be the results.

It requires drudgery for the average family without means to exist in the city. It only requires reasonable industry for the same family to make a comparatively comfortable livelihood in the agricultural sections of most any part of the United States.

Their Physiological Handicap

Two or three eminent suffragettes of quite mature age were recently refused accommodations at a hotel in Boston because of the fact that they were accompanied by no male escort.

The remarks of the disgruntled ladies are said to have been calculated to make the hotel proprietor feel "real hurt" had he been in any degree sensitive.

There is a large amount of money owned exclusively by women prominent in the social world, and in a few cases by women prominent in the financial world. The best way by which these indignant ladies can show their resentment is to induce some of these feminine capitalists to invest in a hotel for the exclusive patronage of women, no man under any circumstances to ever be allowed within the building.

This plan carried out, properly advertised and meeting with the enthusiastic response and patronage of the wives and mothers of America, would soon bring the haughty masculine offender opposed to woman's suffrage to his knees in supplication. Mrs. Hetty Green and Mrs. Russell Sage, not to mention the wife of the late E. H. Harriman, are all possessed of enormous wealth. They could easily finance such an independent movement if so disposed.

Perhaps they have already thought of it and are only waiting for an invitation.

A Movement of Great Importance

The more attention is given to the question of careful examination of school children, the more facts are determined which justify the extension of that movement.

Considering the comparatively short span of years between childhood and adult age, it is somewhat surprising how completely the adult forgets his point of view as a child. This is one of the phases of public school instruction that is receiving the attention which it rightly deserves. To ascertain the child's point of view is to very largely determine the

best methods of imparting a knowledge of books and a rational conception of moral principle.

The University of Pennsylvania is entitled to a great deal of the credit for this splendid work. Dr. Walter S. Cornell, instructor in the medical department of the University of Pennsylvania, and Prof. Lightner Witmer, of the department of psychology, have not only developed this study of childhood peculiarities, but have instituted rational methods for their correction.

The physician who wishes to keep in touch with this splendid work should subscribe to "The Psychological Clinic," which is issued in the customary reprint form.

When only a very few years will make the difference between a lifetime of efficiency and of total failure, it is important to know if the child is suffering from imperfect vision or from some of the uncorrected but not necessarily serious disorders of childhood. This splendid movement is designed to determine the physiological fitness of every school-child before too much valuable time has been lost, and while it is yet possible to stimulate the child's pride of accomplishment and ambition to do his work with others of the same age.

A Possible Benefit from the Recent Prize Fight

While the dangers associated with the prize ring are less in comparison than in other forms of sport which have the sanction of society, the commercial exploitation of the recent Jeffries-Johnson contest is in itself enough to arouse the disgust of all enlightened citizens.

Should the determination on the part of many municipalities to prohibit the moving picture shows from reproducing this contest prove to a considerable ex-

tent successful, it will have been because the authorities and enlightened public have given the time and consideration to this moving picture feature which it deserves.

The press announcement that the moving picture people have a financial backing of \$16,000,000 and are prepared to fight for their interests should not surprise anyone familiar with the facts. Practically every village of a thousand inhabitants and all towns and cities with a greater population are now "covered" by these modern amusement enterprises. In communities where the nickel is the standard of financial capacity of the child and adolescent patrons of these shows, they succeed in capturing the lion's share of the nickels. Where they feel that a dime can be exacted and occasion no material falling off in attendance, they promptly raise the price to a dime. It is a thoroughly modern enterprise.

Every doctor knows that the high-school student with a habit of close application soon finds that there is a limit to the strain he can put on his eyes, but any normal use of the eyes, however concentrated it may be, is not to be compared with the physical tax placed on them by the average moving picture show. If, as a result of the recent fist contest, there can be a general awakening as to the real results of that system of amusement which boasts of a \$16,000,000 capitalization, it will be very much to the benefit of a large number of people who, at the present time, see no disadvantages apparently resulting from the inordinate desire of their children to patronize these cheap amusements.

A fourteen-year-old girl from a refined family is entitled to just as much for her money in a moving picture show as the low-browed tough who sits beside her—and no more.

A New Fresh-Air Cure Soon Available

Some time ago it was discovered that nothing was so beneficial to the nerves of the overworked millionaire as traveling in an automobile at the rate of thirty or forty miles an hour. The rush of the air produced an exhilaration which rapidly restored the nervous system of a great magnate to a symmetrical condition whereby he could begin to plan out new conquests of the stock market.

The imposition of such a trifle as speed laws under such circumstances, of course, seemed absurd.

It seems likely that the way will soon be opened to an opportunity for overworked captains of industry to secure the fresh-air treatment without fracturing any speed laws. The development of the aeroplane is now reaching a stage where the machines can be manufactured on a larger scale of dimensions and expense. The small experimental machines will, no doubt, soon be as much a thing of the past as the original automobile designed to look like an ordinary buggy. With the solution of the mechanical problems it will be possible to manufacture these machines on a high grade of expense which will naturally involve stability and a steadily increasing safety.

Trying to Prove Him Moribund

When a man has passed through the various grades from the New York legislature to the Presidency, and occupied that somewhat conspicuous arena for

seven years, and then steps down and out and refuses to stay any longer, what can a logical minded politician reasonably expect of that individual?

This is one of the questions that is causing a great deal of lying awake at nights in certain quarters. A considerable number of newspapers whose editorial writers must earn their money by protecting the business interests of the stockholders have figured out, with an accuracy which indicates marvelous mathematical precision, that Mr. Roosevelt, former President of the United States, is now politically moribund and dead.

Mountain folklore records frequent instances of the shock experienced by the survivors when a supposed corpse manifested a disposition to again take part in mundane affairs, but their horror is slight compared with that recently shown by some of those who still wonder how they ever survived the Rooseveltian era. By every natural political law an ex-president has become dead and should remain so. But the career of Mr. Roosevelt has been replete with surprises, and those kind-hearted journalists who are warning certain statesmen of independent tendencies against allowing themselves to be entangled with Mr. Roosevelt may prove to have been mistaken in their estimate of the latter's political vitality.

Mr. Bryan has been escorted to the political cemetery several times, but persists in escaping the political cordons surrounding the place of interment. There might be similar disorders attendant upon the political obsequies of Mr. Roosevelt.

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Original Articles

FURTHER USES OF SOLUTION OF CALCIUM CREOSOTE IN MEDICINE.*

By LOUIS KOLIPINSKI, M.D.,

WASHINGTON, D. C.

THE communication ("The Therapeutics of Calcium Creosote") presented at the meeting of the American Therapeutic in 1909 tells of the preparation of this remedy and of its various properties; also of its successful use in croupous pneumonia, typhoid fever, cholelithiasis with septic fever, scrofula, the pretuberculous state, and summer diarrhœa of infants, and in the medical treatment of appendicitis and of several other ailments. The article concludes by saying: "This form of creosote possesses perhaps other virtues than those here described, and may be found to be very useful in other systemic affections and local pathological changes, not alone by its internal administration, but by topic application. Dermatology seems to be a field inviting a fair and varied trial."

Here now follows an account of further uses of solution of calcium creosote in medicine. The greater part of these practical observations were made in the past twelve months. Calcium creosote yields a non-toxic alkaline antiseptic solution, and is therefore superior to corrosive sublimate, phenol or boric acid as a menstruum in surgical work, for the preparation of instruments, and as a wash, liquid dressing, and irrigating fluid for wounds of operation or injury. Its effect on sensation is bland or more or less analgesic. Undiluted, it produces no appearance of irritation or inflammation of the integument, although applied for days. In practice it may be used of ordinary strength and specific gravity or diluted with one to three volumes of water. It may well supplant the antiseptics mentioned and others in routine surgical technique. It can also be applied with great advantage in acute

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and chronic inflammatory processes and in various ulcerative lesions of mucous membranes. In pharyngitis, and catarrhal, follicular or suppurative tonsillitis it can be used of normal strength or diluted as a gargle, or with a spray atomizer. It must be applied freely and repeated every hour or two. In the several forms of chronic nasal catarrh it may be exhibited daily. Here it markedly reduces morbid secretion and crust and scab formation. On account of its analgesic property it can be made the means of affording great relief in laryngeal tuberculosis and in cancer of the tonsil or fauces, while in painful inflammatory processes of the tongue, aphthous stomatitis, and oral syphilitic mucous patches it relieves and heals when used as a mouth wash. A chancroid frequently mopped with calcium creosote solution or immersed in it several times a day heals rapidly, and associated chancroidal bubo subsides at the same time without suppuration, provided the treatment is begun early enough.

Syphilis.—A chancre treated in the same manner likewise heals, but more slowly, and the induration of the base of the ulcer remains. The reactions of these distinct infections under this treatment can be made of use in determining the nature of the sore and the necessity of future internal treatment. In syphilis, besides healing the primary lesion, it is beneficial in the sore throat and in necrotic gummatous ulcer of the skin. In neglected cases this lesion on the lower extremities is usually accompanied with the fœtor of gangrene and with acute pain when badly dressed. The use of calcium creosote locally gives very speedy relief by inaugurating the process of healing. It will be found in practice a grateful adjuvant to the proper systemic treatment of the disease.

In gonorrhœa of the male, given internally, it is without result. As an injection in the same disease it was not tried for the reason that all methods of injection treatment as yet employed can be held unsafe. In females with acute gonorrhœal endometritis extending to the Fallopian tubes and the ovaries, with fever and the tenderness and pain of acute pelvic peritoneal inflammation, given internally at two-hour intervals, it soon brings the temperature to normal, and with the fever is abolished all subjective discomfort. In gonorrhœal rheumatism in both sexes, when acute, its effects are similarly prompt and happy. As long as the joints are swollen and red much relief can be given by inunctions of precipitated sulphur with cocoa butter, one to eight, but the internal frequent giving of calcium creosote rapidly abolishes the fever and exquisite tenderness. The benefit afforded is obvious, as the case recovers rapidly, without recurrence and with no stiffness of joints or tenderness remaining.

In dermatological practice it will be found to have useful and varied properties. Chronic eczema of the hands results from such daily work as is a persistent irritant to the integument, *e.g.*, in bakers, plate printers, machinists and others. It is often found with consumptive ancestry, and the skin is then pale and thin, with scant or no subcutaneous fat. This chronic eczema is also found in adult consumptives, and is very probably a tuberculous lesion. It persists in an indolent and obstinate form for years.

Calcium creosote as a wash, one to one or two of water, or in full strength, by means of a wet compress, is here an excellent application, resulting in a cure. Varicose ulcer of the leg is rapidly made sterile and begins to heal under its use by a compress. In the smaller ulcer about the ankle-joint, which is the most painful form, the pain is quickly abolished by it. Cicatrization is completed by the employment of a dry desiccant powder and an appropriate bandage or elastic stocking. In excessive and offensive sweating of the feet, calcium creosote, used for fifteen minutes twice a day as a foot-bath, will control this otherwise inveterate and harassing morbid function. In eczema seborrhoeicum, seborrhoea oleosa and seborrhoea sicca affecting the scalp, the hair becomes dry and has a tendency to fall out. In males there is a marked inclination to baldness, and in both sexes a profuse production of dandruff. In this common and inveterate form of skin disease calcium creosote solution, when rubbed undiluted into the scalp on retiring at night, is curative and prevents its reappearance. Under its action the hair resumes its natural luster and ceases to fall out. Incipient baldness disappears, and the scales of dandruff, the patient's main annoyance, cease to form. While treatment of such maladies is possible with a variety of antiseptics, and sulphur is held by many to be highly efficient, the calcium creosote seems superior to all these for ease of application and surety of result.

In diabetic gangrene of the extremities and in diabetic ulcers boric acid in solution with sodium biborate is a good remedy, but calcium creosote, diluted one-half, is superior to it because it mitigates the severe neuralgic pain, causes desiccation of the dying and dead tissues, promotes a line of demarkation, and destroys the smell of putrefaction. The use of wet compresses with an impervious outer covering is the most practicable manner of applying the solution. If the patient is moribund it is an application of the greatest efficiency for the comfort of the sick-room, while, if surgical amputation is proper, it renders the wound aseptic.

In psoriasis it is used in the same way, a cover of oil-silk being applied when the patient retires at night and the compress rewetted once where practicable and removed on arising in the morning. The psoriasis of the scalp is treated in a similar manner or with washing, repeated if possible several times daily. The hair should be clipped or cut very short. As a result, the abundant desquamation and the itching cease. The psoriatic patches no longer expand and coalesce, and the affected area resumes its normal color, though a slightly thickened border is apt to remain for some time. The compresses must be continued until the most careful search of the skin can find no trace of the disease remaining. In this affection internal treatment is futile, and may even aggravate the condition.

In lupus vulgaris, when the process is broken down and suppurating, if calcium creosote is given internally, the discharge greatly diminishes and raw, ulcerated excavations appear. These are prone to bleed and are buried under a thick, hard incrustation which is repeatedly dropping off and re-forming, and they finally heal with great slowness, leaving deep-red, very shallow cicatrices, which ultimately turn white. When the lupus nodule is intact, a

pearl-white particle in the skin, calcium creosote produces another reaction. The nodule grows red, then purple, swells up, becomes loose, and is thrown off as a necrotic patch, leaving an ulcerated cavity to heal, as just described. This succession of changes may require months, and is similar to the phases natural to the life history of a tubercular granuloma. Here, however, the one or the other series of changes starts within a few days after beginning the calcium creosote. Lupus with heavy crust formations is quite painful, and in hot weather the seropurulent secretion is much increased. These symptoms are rapidly diminished by this remedy. With the destruction of visible tubercular nodules the process of slow healing begins, but the expectation of a cure may be marred by the appearance of a fresh efflorescence of granulomata here and there at the periphery, causing a slow extension of the disease, with a repetition of the process described. It cannot, therefore, be said that calcium creosote cures lupus, but rather that it destroys the developed neoplasm. In most lupus patients the disease lasts for many years, while, in some, visceral tuberculosis rapidly destroys life. Time and cases have been wanting to observe the ultimate results from treatment with calcium creosote. The remedy is given in full doses, four to six times a day, and is continued for months. The process of destruction and healing can be greatly expedited if at the same time compresses wet with it are kept steadily applied. The pain of the ulcerations, however, is apt to render this local treatment more or less interrupted and irregular.

Other Conditions.—In gastric ulcer it may be used, in aid of the milk diet treatment, as an antiseptic and as an antacid. In cancer of the œsophagus, stomach and pylorus, where surgery has failed, and in the hopeless stages of the disease, much relief can be afforded by means of a teaspoonful of the solution every two or three hours. It checks vomiting and obtunds the incessant pain; so that morphine is needed less where calcium creosote is used. It also moderates the frequency and volume of gastric hæmorrhage. At the end the patient expires from the exhaustion of inanition without the distressing suffering commonly observed in these cases. As a palliative in these incurable cases it is greatly superior to the ordinary narcotics. In the first paper it was stated that, in Pott's disease, hip-joint disease, and tuberculosis of the knee, the ankle and shoulder joints, great improvement has been repeatedly seen after its use. So markedly is this the case that in the treatment of these bone and joint lesions, splints, fixation and extension apparatus, and confinement to bed are employed in addition only in instances where there are urgent special indications, such as intense pain or paralytic loss of function. On the contrary, the patient is allowed to walk about when able, or even to follow his daily occupation. Calcium creosote diminishes pain, lessens caseation and suppuration, and improves the nutrition. It appears to oppose directly the development of the fatal amyloid degeneration. It is a clinical mystery, and a much greater disappointment, to observe how such a remedy, which presents such strikingly favorable results in this variety of a disease with a specific parent cause, in pulmonic and other visceral forms of the same is productive of no benefit, unless it be

in that early precursory stage where no disease process has as yet begun, and only hereditary or other predisposition may make one assume that tuberculosis will develop.

Several correspondents have expressed the apprehension that calcium creosote solution may be an irritant to renal structure or function because of the large quantity of creosote the dose contains. This is a groundless fear, as no appearance of pathological change has ever been found in urines from many patients examined at short intervals with the special purpose of detecting any damage the kidney may have suffered. In typhoid fever and pulmonary tuberculosis where the solution is given daily to the amount of three fluidounces, and continued for weeks, the urine shows no variation from the conditions which are found in these diseases when it has not been administered. In subacute and chronic nephritis it does not increase the albumin, while in renal hæmorrhage it checks the bleeding. On account of its very pronounced antiseptic power, the gastrointestinal symptoms of uræmia, such as flatulence, nausea, vomiting and malaise of indigestion, are relieved. While no good effects have been observed to occur from its use in the different forms of inflammation of the kidney and the sequences thereto, on the other hand, no injury to the integrity of the renal gland has been noticed.

From all of these observations it is evident that calcium creosote does not "fill a long-felt want" or is either a wonderful medicine or a cure-all. It is not heralded as a specific in any one of the many maladies in which it has been given with fair success. It is, however, plain that it can be used daily by the practitioner in a great variety of diseases with favorable effects and great satisfaction, and that it can very efficiently replace a number of other and similar drugs which possess, besides curative properties, harmful and toxic ones. Success in prescribing depends on judgment in selecting efficient drugs which are free from unpleasant side-effects and which also the patient declares to be helpful to him. From this standpoint the remedy here discussed will not lack friends and advocates.

DISCUSSION.

Dr. Barton inquired as to the chemistry of calcium creosote. Was it a mixture or a true compound of creosote? Was it the calcium or the creosote element which produced the beneficial results? As to the effects of creosote in tuberculosis, this opened up a question which seemed to have been long closed. The weight of evidence tends to show that creosote is of little value in pulmonary and other forms of tuberculosis so far as its effects upon the tubercle bacilli themselves are concerned. Any benefit which may result from its use is probably due, in a large measure, to its effect upon the intestinal contents, as in the case of any other intestinal antiseptic, and the pulmonary effects are secondary.

Dr. Morris related an anecdote about his old preceptor who came in hurriedly one day and told him to visit a patient for him. *Dr. Morris* asked what he should give her, and his preceptor replied, "Anything, so long as you give it to her with confidence." He said he also would like to know more about the chemistry of this substance, and inquired particularly as to its effect upon leucocytosis.

Dr. Kolipinski, in closing, said he was unable to explain just how the remedy produced its beneficial effects in tuberculosis of the joints and skin. He did not advocate

its use in pulmonary tuberculosis. As to the chemistry of calcium creosote, he had described its physical and chemical peculiarities in a paper read before this Society last May. It is not a strong chemical compound, but appears to be a basic calcium salt. It is decomposed by air and light, and in some particulars acts like calcium hydrate. It affords a convenient and effective method of administering creosote. Creosote, alone, is irritating to the stomach, but, when combined in this way, it loses its irritating properties to a very great extent.

SKIN INUNCTION AS A THERAPEUTIC MEASURE.*

By LAWRENCE F. FLICK, M.D.,

PHILADELPHIA.

INUNCTION as a health measure goes back very far in the history of mankind. The Romans practised it in the heyday of their civilization and we have reason to believe that they borrowed the practice from older nations. In the greasing of the skin by some of the wild tribes of the present day in various parts of the world we have the suggestion that at a very early time it may have been a general practice by all peoples. Inunction for the purpose of medication was apparently also practised in very early times by the Eastern people at the height of their civilization. For just what conditions they used it we do not know.

Theoretically, inunction ought to be one of our best therapeutic measures in chronic diseases, because it enables us to apply the medicine which we wish to give in a slow, even, continuous manner through the largest organ of the body. To get medicine into the system in this way is particularly valuable in diseases in which recovery depends upon a long, tedious struggle of the cells of the body against an invading micro-organism. In such diseases medication which carries the remedies into the system quickly and in large quantities may do harm. This harm may not be direct, but may be indirect by interference with the physiological functions of important organs of the body. A drug, for example, which may even be tolerated by the tissues in large quantities may nevertheless interfere with digestion, assimilation and metabolism in such a way as to bring dire consequences upon the organism.

The skin is a very important organ in the economy of the body. It has many functions, some of which are very closely concerned with metabolism and nutrition. It excretes waste products, it helps to maintain a normal temperature, and it contributes something to the equilibrium of the circulation. It has the power of absorption, not as one of its chief functions, but secondarily and for protective purposes. It exercises this power through the lymphatic system, which permeates every part of it. The skin all over the body is well supplied with lymph stomata and lymph channels which run toward central trunks and empty into the blood-stream. The lymph nodes under the skin and draining the skin are somewhat restricted in their dis-

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tribution and are found principally in the groin and the axilla. Absorption can undoubtedly take place in every part of the skin, although it is probable that it takes place more rapidly in those parts in which the lymph nodes draining the skin are situated. Inunction may therefore be made in every part of the body, but should be practised particularly in the axilla and the inside of the thighs.

The disease in which medication by skin inunction has received most general recognition is syphilis. Mercurial inunction in syphilis has been a well-recognized practice for a good many years. The system can be brought under the influence of mercury quickly in this way, and the influence can be maintained more evenly than by any other method of medication. The practical results have been excellent, perhaps the best obtainable.

For twenty years I have used the inunction method in the treatment of tuberculosis, having taken up the method on theoretical grounds, and my experience with it has been most satisfactory. I have applied iodine in this way. From time immemorial iodine in some form or other has been recognized as a valuable remedy in tuberculosis, but there has always been some difficulty experienced in its use on account of its disposition to upset the digestive tract and in that way interfere with nutrition. When I began to use iodine by inunction iodoform had some reputation as a remedy in the treatment of tuberculosis, and in using that drug I had gotten the impression that it frequently disturbed digestion and assimilation. I hit upon the idea of inunction and found it quite easy to dissolve iodoform in codliver-oil and olive-oil and get it into the system by rubbing this solution into the skin. The results seemed better than any that I had obtained with the drug by the mouth, and really seemed better than any that I had obtained by any other medication given in any way whatsoever. Incipient cases of tuberculosis seemed to recover under these inunctions in a relatively short time; so short, indeed, that one got the impression that recovery depended upon the inunctions. There was one serious objection to the treatment, namely, the odor of the iodoform, and this objection could not be overcome by any disguise that could be given to the drug. So good were the results, however, that people who had used the inunction were in practically every instance willing and glad to continue it in spite of the odor, which attracted attention everywhere. A few years later when cresol iodide was put into the market I found in it a satisfactory substitute for iodoform in effectiveness of treatment, with the advantage of freedom from odor. I have since then used cresol iodide inunction as a routine treatment in all cases of tuberculosis. Like iodoform this substance gives striking results. I have never been able to demonstrate that these results are due to the iodine, but everyone must recognize the difficulty of doing this in a disease like tuberculosis, in which there can be no standard of pathological conditions and severity of the disease and in which nature itself does so much for recovery that it is impossible in any given case to differentiate between what nature has done and what may have been accomplished by medication. All that one can do in this disease is to give an honest opinion as to the value of any drug or method of treat-

ment, and let that stand for what it is worth. After a long experience with iodine inunction in tuberculosis I am convinced that it is a valuable method of treatment.

There are other forms of iodine besides cresol iodide and iodoform which can be used for inunction. Iodized oil, which is much cheaper than solution of cresol iodide, gives satisfaction, although it does not seem to me to be as useful as the latter. I have an idea that part of the value of cresol iodide and iodoform lies in breaking down after absorption, with production of nascent iodine, but for this view I have nothing but an impression. There are quite a number of iodine compounds similar to these two which may be used, but some of them break down too rapidly and others too slowly. The preparation should hold up long enough in the oil to enable the patient to have a fair quantity put up at one time, without having it spoil for him. There are preparations which are much richer in iodine than cresol iodide, and which would probably be more valuable for inunction purposes were it not that they break down almost immediately when dissolved in oil, and therefore give practically an iodized oil. Most iodine compounds are soluble in codliver-oil and olive-oil in the proportion of about one dram to two and one-half ounces. In essential oils, such as oil of anise, oil of gaultheria, and the like, they are soluble in the proportion of one dram to two ounces. They have about the same solubility in hydrous wool-fat. In prescribing preparations of this kind an effort should be made as far as possible to make them agreeable and pleasant to the sense of smell. Some of the formulas which I have used with satisfaction are as follows:—

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|----|----------------------------------|---------------|
| R. | Cresol iodid. | 3ij. |
| | Ol. rosæ | gtt. ij. |
| | Ol. anisi, | |
| | Ol. gaultheriæ, of each | f3ij. |
| | Ol. olivæ | q. s. ad f5v. |
| M. | Sig.: Rub into body as directed. | |
| R. | Cresol iodid. | 3ij. |
| | Ol. anisi, | |
| | Ol. gaultheriæ, of each | f3ij. |
| M. | Sig.: Rub into body as directed. | |
| R. | Cresol iodid. | 3ij. |
| | Ol. gaultheriæ | f3ij. |
| | Adip. lan. hydros. | 3iij. |
| M. | Sig.: Rub into body as directed. | |

A secondary effect of the inunction which perhaps contributes a good deal to its usefulness is the stimulation of the vasomotors in the skin by the rubbing and the gaultheria. With a view of increasing or diminishing this influence the amount of gaultheria can be increased or diminished. It is quite possible, too, that the gaultheria itself may have a medicinal influence, as may also the oil of anise. The gaultheria is particularly valuable in those cases in which patients complain of a great deal of pain, more or less fugitive in character, in various parts of the body, probably due to the

absorption of toxins from some of the micro-organisms which produce mixed infection of a kind which is non-febrile.

In recent years I have extended my inunction treatment with marked benefit to the pharynx in those cases in which there is a chronic granular pharyngitis. In tuberculosis this unhealthy condition of the lymphatic tissue of the pharynx and the post-nasal pharynx, apparently due to a mixed infection of some character, occurs quite often. It is a great source of annoyance to the patient, and appears to be an impediment to recovery. It is a troublesome condition which does not readily yield to treatment. I have found inunction of these parts, especially around the tonsils, with a saturated solution of cresol iodide in equal parts of oil of anise and oil of gaultheria the most effective treatment with which I have had experience. I apply the oil on a pledget of cotton, rubbing it in with considerable vigor.

TREATMENT OF HYPERTENSION RESULTING FROM ALCOHOLIC AND OTHER EXCESSES BY D'ARSONVALIZATION.*

By WILLIAM BENHAM SNOW, M.D.,
NEW YORK CITY.

THERE is probably no condition that causes more deaths after sixty years of life than arteriosclerosis and its consequences—nephritis and apoplexy.

Until recent years the notion has prevailed that Bright's disease was the cause instead of the consequence of arterial degeneration. Investigation, however, has shown this to be a fallacy; and the saying that "a man is as old as his arteries" has now a different significance in its relation to the sequences than formerly.

The origin or etiology of these degenerative changes is now traceable, as are also the various types of arthritis and cardiac lesions, to a large extent, to a form of toxæmia arising from some germ process probably present in the intestinal tract. This region is the most probable home of the germs which produce the toxic effects, because a correction of habits of diet contributes most to the relief of the tendency to advancement of the process, or to arrest of the condition, as indicated by the control of the otherwise associated high vascular tension—when the diet is corrected.

That intestinal fermentation is not the only cause to which the degenerative process can be traced, is probable. That other irritants, particularly alcohol, play a rôle both primarily and secondarily in inducing the condition, there is abundant evidence—primarily in the blood-stream, and secondarily by deranging gastric digestion.

The percentage of individuals found with advanced arteriosclerosis at and after fifty years of age who have indulged in alcoholic beverages, par-

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ticularly those who use malt liquors, is large. A striking contrast, however, is presented between the man who drinks straight whiskey, or wine, and the man who drinks malt liquor. Many of the former have been found in the writer's observations, who at forty or fifty years of age have a tension not above the normal of 120 mm. of mercury; while to find a beer drinker, who has maintained his vigor, with a normal tension at forty years of age, or even younger, is an exception. Why this is so may probably be explained from the fact that the malt liquor carries with it additional pabulum favorable to the development of the intestinal bacteria, which induce hypertension.

Syphilis, as well as alcohol and auto-intoxication, has been demonstrated to cause arteriosclerosis.

It is an undoubted fact that general arteriosclerosis does not exist without the presence of marked hypertension, except when cardiac compensation is deficient or failing.

Alcohol as an irritant in the blood-stream does seem here, as in other tissues, to induce degenerative changes; probably, however, except in the case of malt liquors, overindulgence in food, gormandizing, particularly in the consumption of red meats, plays as active a part in the cause of arteriosclerosis,—especially with the man who eats intemperately, and who does not labor or engage in other active exercise. It is as if the improperly masticated, undigested and unassimilated residue furnished ample food for growth of the germs which produce the toxæmia. Justification for this contention is found in the observation that persons who are careful livers, consuming moderate quantities of food that is well masticated and digested, and who do not indulge in alcoholic beverages, in rare instances are found at fifty and often at sixty years of age with a blood-tension above 120 mm. of mercury in the male, or 110 mm. in the female at the same age. These figures are based on a large number of carefully prepared records, it having been my custom for several years to take the blood-tension of all my adult patients. Furthermore, the opposite obtains with the gormandizers, who may or may not indulge in alcoholic or other beverages to excess. They will be found at these ages, as a rule, with tensions ranging from 140 to 220 mm. of mercury.

It is a significant fact and one confirmatory of the observations made, that excesses cause hypertension, and that these individuals with high blood-pressure before the process of degeneration is too far advanced respond favorably to the regulation of diet, together with the employment of suitable means for lowering vascular tension. Before the process is far advanced, the tension, when once reduced, may be maintained at normal for long periods by the observance of diet regulations alone.

The prognosis as to arrest of the process must depend upon the individual self-control, the stage to which the process had advanced, and the regimen adopted.

The causative relation of hypertension to degeneration is largely due to the fact that muscular structures in a state of extreme tension cease to take on nutrition. While the tension is moderate, sustaining a pressure below approximately 150 mm. of mercury, the degenerative process is not so marked,

unless of long standing; with a tension continued at 150 mm., the lesion may be well marked. The promptness with which the tension falls to normal by d'Arsonvalization, and the ease with which it is maintained at normal by the regulation of diet alone, is an index of the stage to which the process has advanced.

The reduction of the tension to normal in these cases may be readily effected by more or less frequent recourse to means which most effectively influence hypertension, and by a constant attention to diet.

The scope of this paper does not admit of the consideration of all of the phases of arteriosclerosis or atheroma,—a subject which was considered by the writer in a paper published two years ago. In general, however, in cases before the degeneration of the arterial system has advanced with loss of arterial elasticity, it is possible to reduce the blood-pressure from 260 to 230 mm. of mercury to about the normal range, and to maintain it within the range of safety—approximately from 160 to 130 mm.—by diet and the occasional employment of d'Arsonvalization.

It must be conceded by all that the drugs employed for controlling this condition are associated with so many objectionable features, and are generally so inefficient, that no drug method is free from danger, and none so efficient and free from objection as I shall show the employment of d'Arsonvalization to be. This method and other variations in the employment of high potential electricity at present occupy first place, I believe, as the most efficient means associated with diet for regulating these conditions. It is doubtful if any other procedure is capable of reducing the blood-pressure, by occasional employment of the means associated with a regulation of diet for three weeks, from 260 mm. to 140 mm., and of maintaining it at about the last-named pressure by the employment of the same means together with the regulation of diet. (See cases following.)

That the blood-tension is lowered by the high potential current without depression of the heart is demonstrated from the fact that in cases of advanced arteriosclerosis d'Arsonvalization fails utterly to lower the blood-tension, even when continued daily for a month. This has been shown to be the case in upward of six instances in the author's own cases, and there has been no instance of failing compensation; whereas if there had been depression in these aged people the measure thus employed would have induced a fall in blood-pressure with failing compensation. That d'Arsonvalization effects lowering of blood-tension without producing heart depression, is the experience of all familiar with the method.

The only contraindication so far recognized for the employment of auto-condensation is noted in the management of cases in which intervening resistance is to be overcome, as in parenchymatous nephritis. In these cases it is positively dangerous to employ auto-condensation, for by relieving the general blood-tension the pressure necessary to be exerted to overcome the resistance of the engorged organ is diminished, the blood taking other channels.

Since the invention and institution of means of accurate measurement of vascular tension, first by the employment of the less accurate tonometer

which was applied to the finger-tips, and later by the introduction of the Riva Rocci sphygmomanometer and its modification, an accurate study of blood-pressure has been rendered possible; and for internists and general practitioners of medicine the sphygmomanometer is as much a necessity in making accurate diagnosis as the stethoscope and clinical thermometer. For no diagnostician, however skilled, can form an accurate conception of the relative blood-pressure by the feeling of the pulse without some definite indicator.

The method of Professor d'Arsonval for lowering blood-pressure was discovered and introduced more than ten years ago; but for want of means of accurate comparison, study and investigation of the relative pressure conditions by an instrument of precision, associated with the extreme conservatism of the medical profession in adopting new measures, particularly those which cannot be administered with a knife, hypodermic or spoon, the introduction of one of the most valuable therapeutic measures known to-day has been prevented. That this sort of conservatism is charged to personal neglect may be excused on the ground that the method is technical, and that experience has shown so many evil results to have been produced through the employment of electricity in other forms by untrained hands, that it has become a bogie to the uninitiated.

It is proposed to show that the d'Arsonval current for adoption by the general practitioner has reached a stage of scientific accuracy and simplicity of regulation and adjustment which makes its application neither difficult nor dangerous.

Either a static machine or a Ruhmkorff coil, or other high potential transformers such as are used for X-ray work, in connection with a resonator or so-called high frequency attachment, and with a properly connected auto-condensation couch, with cushion and long metal condenser,—these constitute the requisite apparatus for administering the d'Arsonval treatment. The apparatus should be provided with a hot-wire meter for marking the dosage administered to the patient; and the patient should receive the current, preferably through the hands, from two electrodes connected with the hot-wire meter, which is in series with one side of a d'Arsonval apparatus. It must be recognized by all observers that when the current is properly administered from such apparatus, the current has distinct polar differences, while to a degree alternating in character. The dosage required for a twelve- to fifteen-minute treatment, as indicated by the hot-wire meter, should register from 350 to 500 milliampères, and while this measure will vary in frequency or ampèrage, other things being equal, it serves a practical purpose for the regulation of dosage.

The administration to the patient upon the couch, with the metal condenser extending beneath the cushion for nearly the full length of the patient, is a matter of much importance, because it distributes the condenser effects from one side of the d'Arsonval apparatus more evenly throughout the tissues of the patient. Many devices for administering auto-condensation are upon

the market which do not conform to these conditions and do not obtain the same result.

Another method of lowering blood-tension which is in many features essentially the same is to place the patient within a large solenoid or coil,—the so-called method of auto-conduction, with which many observers have obtained good results. Still another method is to place the patient upon the static insulated platform and connect the positive side of the machine with the platform, the negative being grounded, and then, with the patient lying at full length upon the couch or chair upon the platform, to suspend a half-round cage, also grounded, over the whole length of the patient, placing it at a distance just sufficient so that he will avoid sparks from the cage when a spark $2\frac{1}{2}$ to 3 inches in length is being discharged between the discharging rods of the machine. When giving a treatment in this manner, the machine should be operated at a rate of at least 500 revolutions per minute. This method was first described by Dr. Francis B. Bishop, of Washington, D. C., and has proved equally as efficient as the auto-condensation methods in the hands of the writer. The disadvantage is the noise of the discharging spark-gap and the details of the arrangement. As indicated above, the treatment should be administered for from twelve to fifteen minutes and should be given daily until the tension, if possible, is reduced to nearly normal, and then upon alternate days, with intervals lengthened as the tension may indicate.

The diet régime adopted by the writer consists in the avoidance of all red meats and at first of fish and fowl as well, abstinence from all alcoholic drinks, and the institution when palatable to the patient of the Metchnikoff method of employing milk prepared by using lactic acid ferments. I believe that far more stress than is necessary is laid upon the imported article. Why the lactic acid ferments in this country should not be practically the same as those imported from the Ural Mountains does not appeal to me; nor has the greater value of the latter been demonstrated. Probably the matter of greatest importance in the dietetic régime is the reduction of the quantity of food taken. It is a fact that these patients, put upon half the rations they have been in the habit of consuming, rarely lose body weight. A diminished quantity of food taken, together with the rejection of red meats, constitutes the most important part of the diet régime. We tell our patients to masticate their food more thoroughly, and to take half of the quantity that has been their custom.

There are other measures which play an important part, and are variously recommended though not so convenient nor generally so effective as d'Arsonvalization. Of these, the light bath is probably the choice adjunct method of treatment; the baking process with the body hot-air apparatus will also prove efficient, as will the hot bath and the Nauheim treatment when employed in connection with auto-condensation. It has been our experience that none of these accessory methods, however, will produce so lasting an effect, with the rapid fall of tension, as do the methods employing high potential electrical currents.

The following cases will illustrate the efficiency of d'Arsonvalization in the treatment of high vascular tension:—

CASE I. Mrs. G., aged about 63 years, came for advice September 29, 1907, complaining of tinnitus from which she had been suffering for more than three years. The tinnitus was synchronous with the heart's systole, which suggested that it was probably due to high blood-tension. The pressure was taken and found to be 218 mm. of mercury. With the lowering of the blood-pressure on the third day, the tinnitus had disappeared; the tension remained below 200 mm. from the first treatment, and was reduced approximately about 20 mm. at each treatment. On October 13th, after fatigue following a recent exertion, the blood-pressure was again at 195 mm., when there was a slight recurrence of the tinnitus. On October 17th, the tension before treatment was 180 mm., falling to 159 mm. after treatment. On the 21st, the blood-tension was 159 mm., and no treatment was given. The tension was again taken on September 31st, when it was found to be 160 mm. before treatment. The treatment was then discontinued and the patient returned to her Southern home, and was not seen again until the 31st of August, 1908, when her tension was found to be 165 mm. There had been no recurrence of the tinnitus during the year, except on one or two occasions, when it had been trifling, and her blood-tension had remained at approximately 165 mm.

CASE II. Mr. C., aged 55 years, consulted me for a general anæmic and depleted condition, with skin conditions inactive, and suffering from constipation. The blood-tension at the first call, September 30, 1907, was 145 mm. Treatment was continued until the 27th of November, during which time he had gained in weight, the anæmia had disappeared, and constipation was cured, by the general employment of radiant light and heat, mechanical vibration and static treatment, with high frequency currents added for the relief of the moderate degree of high blood-tension found. At the end of the course of treatment his blood-pressure was normal. On September 31, 1908, after an interval of ten months, during which no treatment had been given, the blood-tension was again taken, and found to be 125 mm.

CASE III. Miss L. B. C. This patient first came under observation in April, 1907, when urinary examination showed the presence of a heavy deposit of albumin with granular and hyaline casts. She was put under treatment with light baths and the static wave current was applied over the region of the kidneys. On July 1st, the albumin and casts had disappeared, and the patient left for her vacation in a good physical condition. On October 17, 1907, she returned, and her blood-tension was found to be 190 mm. of mercury. She was then given regular auto-condensation treatments, under which her blood-tension gradually fell. On January 21, 1908, it was 125 mm.—a fall of 65 mm. Treatment was continued at intervals of a week until June 30th, during which time her tension had ranged before each treatment from 130 to 145 mm.; always falling approximately 10 mm. after each treatment. On December 9th, her tension was found to be 110 mm. Her tension was not again taken until November 27, 1909, when it was found to be 150 mm. and fell to 140 mm. with auto-condensation treatment. During the interval between October 17,

1907, and November 27, 1909, the urine was free from granular and hyaline casts, and the patient had been in excellent health. This patient had been living upon a restricted diet, owing to her nephritis, for more than a year before she came under observation; and with the diet unchanged, under the static, light and vibratory treatment, the symptoms of nephritis had disappeared, but the tension had remained persistently high until auto-condensation was employed, when it promptly fell from 190 to 160 mm., and has remained at an average of approximately 140 mm. ever since. There has been no recurrence of either albumin or casts. This case demonstrates the persistence of high blood-tension under diet, which, under the same régime with the added employment of high frequency auto-condensation, had fallen and remained within a range of safety for two and a half years.

CASE IV. Mr. H. Came under observation February 13, 1908, suffering from a severe railroad injury of the spine obtained one year previous. His blood-tension at this time was 174 mm. of mercury, but under auto-condensation and diet it rapidly fell to 125 mm., and frequently registered as low as 115 mm. On May 28, 1909, the blood-tension was 115 mm., after an interval dating from December 21, 1908; on November 13, 1909, the tension was again taken, and found to be 125 mm. Nearly five months later, on March 4, 1910, the tension was 130 mm. and fell to 110 mm. following a twelve-minute auto-condensation treatment. This case illustrates the effect of treatment together with a changed habit of diet upon the traveling man. The traveling salesman usually overindulges in the quantity of food consumed, and is prone to high blood-tension early in life, as was this patient with 174 mm. blood-pressure. The patient is now paying sufficient attention to his diet, avoiding large quantities of meat and eating about one-half as much as he had consumed previous to the time he came under observation. He has maintained his full average weight and is in the best of health, having also recovered from the effects of his spinal injury.

CASE V. Mr. C., retired engineer, aged 70, came under observation, referred by his family physician, May 9, 1908, for treatment of arteriosclerosis. His arterial tension at that time was 210 mm. of mercury, but fell to 195 mm. at the first treatment. He returned two days later with a tension of 198 mm. His tension on the 15th had fallen before treatment to 190 mm. and following a twelve-minute auto-condensation treatment registered 172 mm. On the 15th of the same month, from the effects of an accident, it had increased to 240 mm., but made the remarkable fall to 190 mm., a fall of 50 mm., following twelve minutes of auto-condensation treatment. On May 17th, the tension registered 215 mm. and after treatment had fallen to 180 mm. Not again until September 21st of the same year did the tension again reach 200 mm., having remained for weeks consecutively without treatment between 180 and 165 mm. After September 21st the tension again subsided, and was maintained at from 180 to 165 mm. by occasional treatment until November 29, 1909. After an interval during which he had not exceeded four auto-condensation treatments monthly, his tension was found to be 220 mm. Since that time his treatments have been more frequent, maintaining

his tension constantly below 200 mm. to the present time. This case illustrates the type of cases who are on the verge of apoplexy and nephritis; a case of advanced arteriosclerosis, but still responding to treatment with a fall in blood-pressure. It was my rule early in the treatment of these cases not to attempt to reduce blood-tension below 155 or 160 mm.; and this instance has given excellent opportunity to make an observation as to the control of blood-tension in these cases. This gentleman has been faithful to his treatments, coming frequently for observation, and only taking treatment when his tension ranged above 175 to 180 mm. He is in good health for an old gentleman, and we feel that he has been saved from a crisis which was pending, having had no apoplectic attack, and been made to feel more comfortable through the lowering of tension. I would state here that during the last three years I have observed only seven patients who did not respond to auto-condensation treatment with a reduction of more than 5 mm. and whose tensions have remained persistently high. These patients, however, are relieved of their dizziness and have their nervous symptoms greatly mitigated by frequent auto-condensation treatments.

CASE VI. Mr. C. A. G., salesman, 26 years of age, suffering from vague nervous phenomena with constipation, was found to have a blood-tension on May 16, 1908, of 165 mm. This young man thought a great deal of eating, and ate heartily at all times. Under restraint of diet and three auto-condensation treatments weekly until April 23d, his blood-tension had fallen to 124 mm. before treatment. On January 6, 1909, he again came under observation, and his blood-tension was found to be 185 mm., falling to 142 mm. after the first treatment. Treatment was continued three times weekly until February 26th, when the tension had again fallen to 110 mm., and treatment was again discontinued. At a recent examination on April 6, 1910, his blood-tension was found to be 130 mm.

I wish to report three additional cases which are now under observation.

CASE VII. Mr. H., an advertising man, came under observation December 6, 1909, with a blood-tension of 260 mm. With daily twelve-minute séances until December 10th, he came to the office with a blood-tension of 215, and for the first time his tension fell below 200—to 190 mm. of mercury. Following this, the tension rapidly fell under daily treatments from the 12th to the 16th, when he came in with a tension of 180 mm. and it fell to 170 mm. after treatment. After an absence then of eight days without treatment, his blood-tension was but 185 mm. and fell to 165 mm. following treatment. From that day his calls have been less frequent, and on January 10, 1910, he came to the office with a blood-tension of 135 mm., which fell to 130 mm. after treatment. Since then his treatments have not been more frequent than once or twice weekly, and at no time has his tension been above 145 mm. This patient had suffered for three years with headaches twice daily—in the morning and in the evening. These disappeared when the tension had fallen below 200 mm. Upon the institution of treatment the patient was put on a restricted diet promptly eliminating all meats, including fish, and also put on the use of the Metchnikoff plan of lactated milk diet, which he takes with a relish. The

patient's own expressions of gratitude for his changed condition and improvement of the general physical condition, with the disappearance of dyspnoea on exertion, were the best evidence of relief with the exception of the readings of the sphygmomanometer.

CASE VIII. Mr. G., teacher, first came under observation January 21, 1910, when his blood-tension registered 230 mm. Following the first twelve minutes of auto-condensation, it fell to 220 mm. Under daily treatments until January 25th inclusive, his tension upon entering the office was 175 mm., and fell to 155 mm., after which he called upon alternate days, until January 31st, when his tension fell after treatment to 140 mm. Treatments on alternate days were continued to February 26th, when his blood-tension was found to be on entering the office 120 mm., and no treatment was given. From March 10th to March 22d but two treatments were administered. On March 22d his blood-tension was 138 mm. after ten days without treatment,—only 3 mm. higher than at the end of the previous treatment.

If there is any other method that would obtain the results of a fall in blood-pressure from 230 mm. to 138 mm. within two months, during which time only sixteen treatments were administered, I do not know what it is. The improvement in this patient's general health has been in every way in accord with the fall of the blood-pressure. His diet, which had previously been simple, was only altered in the elimination of meat, stopping the use of a moderate quantity of beer, and a diminution of the quantity of food taken, together with the adoption of the lactated milk.

CASE IX. Mrs. A. M. P. was referred to me by her family physician who had employed every medical means to lower her blood-tension, which had ranged as high as 250 mm. When she came under observation her blood-pressure was 230 mm. of mercury, and she was suffering from a marked diabetes mellitus. After the first treatment the blood-pressure fell to 210 mm.,—a fall of 20 mm. Daily treatments were given for five days, when the tension had fallen at the close of the treatment to 175 mm. Following this, treatments were given on alternate days until February 19th, when the patient came to the office with a blood-tension of 145 mm., which again fell to 135 mm. Following alternate day treatments, the blood-tension on February 28th was 125 mm. after treatment. Fourteen treatments had been administered during the month of February with a fall in blood-pressure from 230 to 125 mm., and the patient's general health and physical appearance had greatly improved. She is now taking treatments once weekly, with a blood-pressure ranging between 140 and 160 mm.

These three last-mentioned cases denote the remarkable field of possibilities from auto-condensation and diet in the treatment of extreme conditions of hypertension. In these cases the blood-tension had risen to a dangerous degree and had probably been so persisting for many months. Under treatment the physical condition of the patients has been greatly improved, impending danger removed by occasional treatments, and in all probability degeneration arrested.

I will not weary you further with a discussion of the possibilities of this method of treatment; but I believe the time has come when, its value having been demonstrated, it is to be earnestly commended in this most dangerous and serious of physical derangements.

RED INDICAN URINE; ITS CLINICAL SIGNIFICANCE THE METCHNIKOFF THEORY.

By ANTHONY BASSLER, M.D.,

Visiting Gastro-enterologist to the Peoples Hospital; Attending Physician
to the St. Mark's Hospital Clinic,

NEW YORK CITY.

FIVE chromogens are met with in the urine—those from the bile and blood, and the three which represent the conjugate or ethereal sulphates. Of the latter, to which have been given the names indican, urohæmatin (indigo-red) and urorosein, respectively, much has been written about the first, and too little about the second and third.

The organic, conjugate, or ethereal sulphates are represented in the daily output of sulphuric acid in the ratio of about 10 for the preformed and 1 for the conjugated, the combined daily output of the preformed and conjugated combinations being between 2 and 3 grammes a day. Taking the substances from which they are derived (indol, skatol and phenol), it may be said that when the production of these in the body is in excess or is beyond the combining power of the oxidase of the hepatic, renal or general tissue cells, they are not firmly bound, and oxidize merely to the indoxyl compounds of potassium, in which forms they are found in the urine. The most thoroughly studied of these is the conjugate potassium indoxyl-sulphate, or indican, which is colorless, but which when treated with strong acids and oxidizing agents is decomposed with the formation of indigo-blue, the color of which is easily recognized. Such urines are seen in cases in which anywhere in the body (as in the contents of the intestines, accumulations of putrid pus, septic peritonitis, empyema, etc.), a decomposition or putrefaction of albuminous substances is taking place. Regarding urohæmatin and urorosein, however, no such definite statement can be made; at least, it can only be stated that these are more complex substances in their make-up than indican alone.

While indican, urohæmatin and urorosein are found in trivial amounts in urine from normal individuals, there is no doubt that when they are present in large amounts they have distinct clinical significance. In entering upon the consideration of those cases in which the origin is intestinal, we find that these bodies have a direct importance in the production of such local conditions as the various forms of chronic enteritis and colitis, in which the mucosa and muscularis are rendered more or less atrophic; in the production of, first, an excess of secretion in the stomach with hypermotility and hypersensibility, and later on a depressing effect on secretion and motility, but not on sensibility (as

I have advanced, I believe that the finding of low or absent gastric secretion in indicanuric cases is a resultant and not the causative condition); to these toxic depressing actions on the correlated functions of the digestive tract are added those on the liver in the under-production of bile and urea and over-production of uric acid, on the pancreas in depressed secretion, and from these, all the effects upon the nutrition of the organism as a whole, and of the nervous system in particular; and, as a last link in the chain, degeneration of certain parenchymatous tissues (nervous, renal, cardiac, hepatic and vascular). In the study of some of my recent cases, I have often been reminded of those instances of homicide described in fiction, in which steady dosing of arsenic, phosphorus or lead eventually brought about a fatal ending. The two groups of cases differ in the nature of the toxic agents, but some of the ethereal sulphate cases show no less certainty in the final harmful results.

From March 1, 1909 to March 1, 1910 I examined 1371 specimens of urine from cases coming under my observation for the first time. Of these, an increased conjugate sulphate partition, represented in the three chromogens, was noted 427 times; 171 showed urorosein alone; 67, indican alone; 166 showed urorosein and indican combined; 20, blue and red indican combined, and 3 urohæmatin alone. As a report of these would prolong the article unduly, each one having a more or less complex clinical make-up, I will limit myself here to the three red indican cases alone, and a mention of some of my views regarding the significance of urorosein. The urinary test which I use is a modification of the Jaffé test, consisting of the addition of an equal part of concentrated hydrochloric acid to the urine (about 5 c.c. of each), then about 2 c.c. of peroxide of hydrogen and about 3 c.c. of chloroform, shaking well, and then centrifuging the whole. This gives the blue and red indican in the chloroform and the urorosein in the supernatant fluid (the red indican and urorosein both being rose-colored).

Urohæmatin is most probably an indoxyl derivative having a clinical significance similar to indican. It is more rarely observed alone than indican, although a purplish color which represents both the blue and the red is a most frequent finding. Red indican urines are often found in extensive disease of the small intestine allowing of resorption, in gastric cancer, and in acute and chronic peritonitis. Like blue indican, it is met with also in ileus and intestinal obstruction, though not so commonly in the malignant and organic strictured states and in chronic diarrhœa. It is present in normal urine in small amounts, and may be demonstrated by shaking the urine with chloroform (about 4 to 1 parts by volume) and decanting it after agitation during several days, when the addition of a drop of concentrated hydrochloric acid to the chloroform will cause the appearance of a rose color—the deeper the color, the greater is the amount of chromogen present. It is probably of albuminoid origin.

Urorosein is probably a derivative of skatol. In the author's modification of the Jaffé test as mentioned above, this chromogen may be extracted from the supernatant fluid by amyl alcohol and separated from other pigments that may be present at the same time by shaking with sodium hydrate, by which the

solution is decolorized. Upon the addition of one or two drops of hydrochloric acid to the alcoholic extract the rose-red color of urorosein reappears, quickly fading out on standing. It is interesting to observe that while both indicans are found in cases of albuminoid putrefaction in the intestines, urorosein is more commonly found where there is fermentation of vegetable substances, as in cases of saccharo-butyric chronic intestinal putrefaction. These cases of putrefaction may have neither blue nor red indican in the urine (only urorosein), and they comprise by far the greatest number of cases of chronic intestinal putrefaction of all forms that exist.

The blue indican cases usually present themselves clinically showing depression, relaxation, lowered vitality and persistent anæmia. The red indican cases, on the other hand, are more usually of the irritative, anxious, highly neurotic and hysterical types, with good general body and blood conditions, and are not so commonly constipated. In this way they are more like the urorosein cases although more pronounced. My experience has been that the bacterial and cultural examinations of the fæces in the blue and red indican cases show no distinctive differences. Some yield high Gram-positive findings, others low. In the urorosein cases, however, the Gram-positive diplococci and bacillus *aërogenes capsulatus* are almost always high. It must not be forgotten that just as these chromogens differ in findings, amounts and combinations, different bacterial results in the fecal examinations are also met with. After such conditions have existed for a while, improperly or negatively treated, or not under observation, the different bacterial species usually proliferate hand in hand; often one type of a distinctive kind will present phases of difference as time goes on, and it may even develop into another type while the case is under observation. It is almost a daily observation with me that when the proper diet for an indican case has been maintained for a while (essentially proteid free), and the output of indican has been lowered, the individual will develop into a urorosein case for which the diet would be essentially proteid in make-up. Among other things that must be done in the handling of these cases is to put all types on a diet of proper caloric value to meet the weight and work of the individual, and to grade the proteins, protein spacers and vegetables to meet the urinary indications. Only in this way can substantial tissue-construction in treatment take place.

The carrying out of such a treatment is difficult and requires close watching and much labor in the laboratory. For these cases there is no short cut of therapy like the Metchnikoff Bulgarian bacillus milk treatment. The hundreds of patients with these conditions whom I have observed and whose urines and fæces I have exhaustively examined from time to time have definitely proven this to be so, even in the face of the good reports that are being advanced from the use of this milk. The worst cases of indolic putrefaction of the gut I have seen were using this milk for weeks without improvement. Let us not forget that an individual on a diet of good milk harbors less bacteria in the colon than when on any other kind of diet, simply because the constituents of milk are of such kinds and in such forms that they are all quickly digested and absorbed, and leaving but little residue to accumulate in the colon. We long

ago learned empirically that there was some special value in milk diets, and that is why milk has been used these many years in our hospitals as a food for the very ill. It is entirely a matter of how much and what kind of foods pass through the ileocecal valve, past further digestion and absorption, for accumulation in the colon, in which organ these organisms are rife and can attack them. I predict that in ten years from now the fallacy of the inhibitory effects of the Bulgarian bacillus on other organisms in the gut will be so plainly and broadly understood that the use of this milk will be only of historic interest in medicine, and that special dieting and vaccination, with old-fashioned remedies, will then hold general sway in the handling of these cases.

Authors' Abstracts

THE PREPARATION OF THYROID GLAND FOR USE.*

By S. P. BEEBE, M.D..

NEW YORK.

THE utility of thyroid extract in a variety of conditions had now been so thoroughly demonstrated that the demand for a standard preparation might no longer be ignored. The manufacturers at the present time supplied a variety of thyroid products prepared by different methods, and undoubtedly of differing therapeutic effects. During the last three years he had had many opportunities to compare the effects produced by various forms of thyroid preparations, and had arrived at the positive conclusion that the human thyroid extract, administered hypodermically, was by far the best for the human subject. In its effects upon simple goitre, myxœdema, cretinism, athyroid symptoms occasionally observed in late exophthalmic goitre, and various metabolic disorders associated with hypofunction of the thyroid, there was no other substance which acted so economically and efficiently as the proteid precipitated from extracts of normal human thyroid glands by acetic acid and heat at 44° C., and afterward thoroughly washed. Therefore, we should use only the proteid obtained by a similar method from animal glands. The prepared proteid showed quite as wide a variation in its iodine content as did the fresh glands, and before being used therapeutically it was essential that the proteid should be standardized on the basis of its iodine content, and a uniform intelligent dosage regulated thereby. For the standard, the proteid obtained from normal human thyroid glands had been selected. The average figures of a large number of iodine analyses of the proteid obtained from normal thyroid glands by the process mentioned showed that 1 gramme of the purified proteid contained 3.384 milligrammes of iodine.

* Abstract of paper read at the Eleventh Annual Meeting of the American Therapeutic Society, held in Washington, D. C., May 5, 6 and 7, 1910.

After the purified proteid from the animal glands was obtained, the iodine content was determined by the Riggs method, and, regardless of whether this proteid was richer or poorer in iodine than the standard, it was considered that each 3.384 milligrammes of iodine represented 1 gramme of the active thyroid proteid. For the purpose of administration the proteid was diluted with the appropriate amount of lactose, and made up into 2-grain tablets by the usual method. Tablets of different strengths were prepared, and 1, 2 and 5 per cent. tablets had been found to give a sufficiently wide variation in strength for all the usual requirements. By 1 per cent. tablet was meant that 1 per cent. of the dried weight of the tablet was made up of the purified thyroid proteid according to the standard described. It would be observed that, by this method of standardizing and preparing the proteid for therapeutic administration, a uniform physiological activity might be expected, regardless of the character of the glands from which the proteid had been obtained. For hypodermic use, solutions of the proteid in varying strengths, standardized on the iodine basis, had been put up in sealed glass tubes. The products prepared according to the method referred to had now been employed for about two and a half years in a wide variety of conditions by a considerable number of experienced clinicians, and the results had demonstrated their value to such an extent that he had no hesitation in saying that this method of preparing and standardizing thyroid, giving as it did all of the physiologically active portions of the gland, with none of the toxic, deleterious substances contained in the whole extract, was superior to any method now in vogue.

DISCUSSION.

Dr. Osborne said that the method of assay described by *Dr. Beebe* appeared to be just the one we were looking for, and if it could be incorporated into the next Pharmacopœia we would undoubtedly be able to obtain pure thyroid preparations. As it is now we cannot depend on these preparations at all. Whether the various activities of the thyroid can ever be separated, chemically or otherwise, is a question for the future to determine. They could undoubtedly be utilized in the treatment of many diseases if they could only be differentiated. We speak of hyperthyroidism and hypothyroidism, but there are undoubtedly many activities of the gland which are not included under either of these terms and which may become deranged as the result of disease and produce symptoms, the true nature of which we do not now understand. At present we recognize hyperthyroidism and hypothyroidism according to the secretory activity of the gland as a whole, but, as a matter of fact, in either of these conditions there may be a disturbance of one or more of the individual activities of the gland; some may be acting too much and others too little, and if we were only able to differentiate them we should be in a better position to meet the symptoms which result.

Dr. Satterthwaite said we did not always obtain good results by treating exophthalmic goiter with thyroid preparations. Sometimes, however, the results were wonderful, and he cited a case in point. In another case in which he had every reason to expect a good result, he obtained none whatever. He believed that failure in these cases was often due to the use of a worthless thyroid extract; but, as a rule, his experience with this agent, both in exophthalmic goiter and myxœdema, had been most satisfactory.

Dr. F. H. Gerrish, Portland, Me., moved that a vote of thanks be extended to *Dr. Beebe* for his interesting and instructive paper. The motion, duly seconded, was carried unanimously.

Dr. Morris asked how it was that in cases of lack of development of the thyroid gland we obtained a beneficial result from the use of thyroids except upon the theory that we thereby supply a substance which is needed in the economy of the body, and which is lacking by reason of the imperfect development of the gland. He also inquired whether the enlargement of the thyroid in certain diseased conditions is a compensatory and desirable hypertrophy, brought about by the body in an effort to furnish an adequate quantity of thyroid secretion, or wholly a pathological condition. He saw many cases of goiter in his clinic, and they usually responded, more or less, to X-ray treatment. He had now a number of such cases under observation. One of his patients told him that she, with eight other girls, had become affected with exophthalmic goiter since drinking distilled water where they worked. He sent his assistant to investigate the matter, but he was unable to see the girls, because they had gone to other places of employment. He could not, therefore, verify the girl's statement as to the other eight, but she had no apparent reason for prevaricating, and was simply repeating a comment of the shop.

Dr. Fisher said he had used most of the various thyroid preparations upon the market, and had found that in a condition like myxœdema one of these preparations might give satisfactory results when another would produce no beneficial effects whatever. In the latter instance the failure was undoubtedly often due to the employment of an inferior or inert product. Unquestionably the thyroid preparations should be standardized. The general results of treatment, however, show that there must be a goodly amount of thyroid in the average product. A certain proportion of cases of exophthalmic goiter respond to treatment by thyroid, and others do not. In the cases in which it does good the thyroid gland is undoubtedly in a condition of hyposecretion, possibly in an atrophic condition, as in some cases recently reported. When the preparation fails to produce any marked benefit, it would appear to be likely that the gland is in a state of hypersecretion. Much, however, remains to be learned about the various functions and activities of this gland.

Dr. Beebe, in closing, said that he had not intended by any means to assert that all or even the great majority of the thyroid preparations on the market are wanting in activity; but in his experience he had found a wide variation between the products of different firms and also between the different thyroid preparations of the same firm. Patients, also, differ widely as to the amount of thyroid they can take. There can be no question about the efficacy of thyroids in cretinism. In this disease the product seems to supply a need on the part of the system, and there seems to be no doubt that we can supply or make up for a number of the functions of the gland by giving thyroid preparations by the stomach; but, according to his experience, while many myxœdema patients improved under the treatment, they never became absolutely normal. He had used human thyroids in the treatment of three cases of cretinism, and found that much less of this product was needed to produce the desired results. He cited this as an interesting point, although he did not believe the method would ever be used to any considerable extent. While much good can be accomplished by the administration of the thyroids in exophthalmic goiter, much harm can also be done by their injudicious use. In reply to *Dr. Morris's* question as to whether the hypertrophy of the gland is evidence of an effort on the part of nature to supply a physiological need, he said that the question was a difficult one to answer. In some cases, where a reduction of the hypertrophy is brought about by the use of iodine, the diminution in the size of the gland is attended by the happiest results. In others, all the symptoms of overactivity of the gland continue, which would seem to show that, in some instances, at least, the hypertrophy is not a physiological process. The diseases of the thyroid are not simple affections, sharply defined one from another, but just as there are undoubtedly activities of the gland which we do not now understand, so there may be disturbances of function in addition to those which are recognized at the present time, namely, hypo- and hyper-secretion. Disease of the thyroid does not necessarily mean over- or under- activity; both may be present at the same time. The speaker urged a deeper study of thyroid conditions, and particu-

larly a differentiation of the activities of the gland. In the face of the complex conditions which obtained in thyroid affections it was a mistake to generalize, as in simple diseases like typhoid, measles, etc. What is most needed is a classification of thyroid diseases.

ASTHENIA UNIVERSALIS CONGENITA.*

By CHARLES LYMAN GREENE, M.D.,

ST. PAUL, MINN.

To the acumen of Professor Stiller, of Buda-Pesth, we owe the identification and full description of this disease, which is congenital in foundation. Assuming with him that a large number of persons are born asthenic, and that this defect involves every structure and function of the body, one can readily follow his argument, which brings into one pathological circuit a multitude of ailments hitherto regarded and treated as separate and distinct conditions. Among these are the so-called phthisical habitus, neurasthenia of the commoner type, certain apparent renal inadequacies, functional albuminurias, nephroptosis, gastroptosis, enteroptosis and that enormously predominant group of dyspepsias known as the gastric neuroses. Stiller insists that an abnormally fluctuating or actually floating tenth rib is almost pathognomonic of this condition, and this the writer believes to be true, though to him the general structural stigmata are even more interesting.

These may be placed under several heads:—

(a) *Outward Signs*.—Small features; soft, fine skin; usually more or less pallid, loose-fitting and relaxed; slender figure, delicate bones; long thorax, narrowed or flattened, with sloping ribs, narrow epigastric angle, and the costal stigma described above. Upper and lower thoracic apertures and the pelvic inlet and outlet are said by Stiller to be narrowed. Active cases are generally more or less under weight.

(b) *Heart and Blood-vessels*.—Stiller emphasizes the fact that hypoplasia of both structures exists, and the writer believes that the fluoroscope will usually show a small, vertically placed, low-lying heart. Such hearts are easily strained and rendered irritable or temporarily incompetent by unwise exercise. It is generally true that asthenic individuals almost wholly escape degenerative diseases of the heart, blood-vessels and kidneys.

(c) *The Lungs*.—The lungs seem sluggish as regards expansion, and the areas of percussion resonance at the apices usually show a low maximum height, slight respiratory excursion, and, frequently, marked inequality between the two sides.

(d) *The Stomach*.—Gastroptosis will usually be found. Any of the multitude of gastric neuroses may be present and find expression in hyperchlorhydria, heterochylia, hypochlorhydria, achlorhydria or achylia.

(e) *The Intestines*.—Constipation is almost an invariable accompaniment

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of this disease. The writer has yet to encounter a case of mucous colitis in which the asthenic stigmata were absent.

(f) *The Blood*.—Active cases usually show some degree of anæmia.

(g) *The Kidneys*.—Serum-albuminuria in youth and childhood, without demonstrable renal lesions, is usually, if not always, associated with the *asthenic habitus* and marked subnutrition. Rest and generous diet is the regimen for these cases. Practically all asthenic patients show a subnormal nitrogen excretion if any active symptoms of functional derangement are present.

(h) *The Nervous System*.—Asthenic patients are usually quick, impressionable, emotional, but lacking in self-control and break down under sustained effort.

Doubtless the comparative immunity of children may be explained by the activity of child life. In especially well-cared-for, well-nourished individuals of both sexes, leading well-ordered lives, no nervous manifestations need appear. As a whole, asthenic individuals are peculiarly vulnerable to tuberculosis, and at all ages bear acute diseases less well than normal individuals. With them the putting on of flesh means improvement, and so long as they retain this they remain well. Undoubtedly asthenic children are born of asthenic parents, but proper feeding, bathing, clothing and exercise are the chief requisites:

The treatment of active symptoms resolves itself into two chief factors: (1) the improvement of nutrition; (2) the proper use of suggestion. There is absolutely no limit to the pain manifestations of asthenia, yet, whatever the location and however great the intensity, they disappear like magic under rest and proper nutrition. Suggestion is carried out along the usual lines for neurasthenic cases, and as soon as the patient has gained several pounds beyond her previous maximum, or at least been brought up to it, more active exercise is gradually begun and continued from day to day until the patient is taking a large amount of exercise, but holding and even gaining weight. The writer firmly believes that this treatment should be adopted in the care of all patients who are able to pay the necessary hospital charges and special nursing fees. In other cases a change from the city to the country, or even rest at home with increased feeding, may prove sufficient, but in the writer's experience such cases seldom completely recover and are either failures or remain more or less invalided and subject to relapses.

DISCUSSION.

Dr. Fisher said that these patients were most interesting from an emotional and educational standpoint. They can do much work and remain useful members of their families for life if they keep within a certain limit. If they overstep this limit they begin to lose weight and run down, not acutely, but slowly and progressively. The prognosis depends largely upon the willingness of the patient to carry out the details of treatment and upon the personal influence of the physician. In general, he was not inclined to take an unfavorable view of such cases. As to accomplishing a cure by the surgical correction of visceral ptoses, he had been impressed by the large proportion of cases in which operation failed to produce beneficial results, and he was rather against

than for operation, unless there were very clear and distinct indications for surgical interference. This was particularly true of uterine operations. The visceral abnormalities were but rarely the cause of the asthenia, and surgery was therefore by no means a cure-all for this condition.

Dr. Blackader said these cases were not uncommon, but it was only recently that we had come to recognize their importance. He referred particularly to the cases occurring among children. The future welfare of such children depends almost entirely upon what is done for them in early life. Many of them are overpressed at school, they get imperfect sleep, and they have poor teeth which are not properly attended to, in consequence of which they suffer from impaired digestion on account of imperfect mastication of the food. The future for them is dark, unless we can succeed in lightening their mental work and secure for them sufficient sleep and proper nutrition. Attention should also be given to a careful training of their emotional tendencies.

Dr. Osborne asked for information on one point. Almost every neurasthenic, especially if the patient is a woman, has some sort of abdominal disturbance. Now, if we made a diagnosis of loose kidney in one of these cases, should the kidney be fixed or not? We all knew that these patients improve after almost any kind of an operation, and he was not sure but that many of them would improve whether the kidney was returned to its normal position or not. He would like to hear from *Dr. Morris* on this point.

Dr. Morris said he had seen several of these patients operated upon when the operation should never have been performed, and he had said more than once that, if surgeons wished to avoid discredit in this line of abdominal work, they must differentiate the cases of congenital defect from recent, acquired, or traumatic cases. In reply to *Dr. Osborne's* question, he said that whether or not the kidney should be fixed depends upon the amount of harm that it is actually doing to the patient. If the loose kidney presses upon the pylorus or leads to torsion of its vessels or of the ureter, and thereby produces untoward symptoms, it should be fixed; but if it has no such range of motion and the pathological condition is discovered merely by accident in the course of an examination of the abdomen, there being no reason to believe that it is doing the patient any harm, there is no indication for surgical interference. In other words, if the loose kidney is actually doing the patient harm or is a menace to her safety, it should be fixed in its natural position; but the operation should not be performed just because the patient is discovered to have a loose kidney. He asked *Dr. Greene* whether he had noted the proportion of cases in which there are present other congenital stigmata, like high arch of the palate, imperfect development of the thyroid gland, etc.

Dr. Wilson said that surgeons had too often advised operation for the relief of the symptoms mentioned by *Dr. Greene*. They are now coming to realize that operations for the relief of symptoms in neurasthenic patients are not only productive of no real good in most cases, but often make the condition of the patient worse than before. The danger now is that the pendulum will swing too far in the opposite direction, and that some worthy cases will be denied needed surgical treatment. While scientific physicians realize that generalizations are sometimes necessary, they always keep clearly in mind the fact that the patient must be studied and treated as an individual.

Dr. Satterthwaite asked *Dr. Greene* to state his views concerning the relationship of intestinal affections, particularly mucous colitis, to these cases. He often found that if he devoted his chief attention to the intestinal tract, giving high enemata, etc., he succeeded in relieving not only the local symptoms, but also the general neurasthenic condition as well.

Dr. Morris inquired as to the significance of displacements of the colon.

Dr. Gallant said that in these cases the colon must go down before the stomach. Upon vaginal examination we could sometimes feel the colon in the *cul-de-sac*. He

recalled particularly one instance of this kind. Under these circumstances the mucous colitis was readily explained. Nearly all of the patients suffered from these conditions in a chronic form. He is now treating a patient who has been in a sanitarium for four weeks with marked hallucinations. Her husband states that she has had them before also. Her bed is raised ten inches at the foot and she is being overfed, and he hoped by posture and medicinal treatment to get the stomach back into place. If he did not succeed in this he intended to operate and free the dilated stomach from its adhesions, and thereby replace it manually. He believed that something definite should be done, or this patient would lose her mind. According to his experience, when the stomach was thus freed it promptly collapsed, and did not dilate again. The weight of the colon was largely responsible for the dilatation and ptosis of the stomach. He did not know how the adhesions had originated in the case referred to. All that the patient could mention by way of explanation was that she had had an attack of typhoid fever some time ago.

Dr. Greene, in closing, said that in treating these cases we should remember that we are dealing with a systemic lack of vitality affecting the whole body. This is the key to the symptomatic relationships. Christian Science sometimes does good in these cases, just as the physician does good by hopeful suggestion; but, on the other hand, it is liable to do irreparable harm by causing the patient to defer needed treatment. In answer to Dr. Morris's question, he said that thyroid stigmata are rarely present. Arched palate, however, is frequently observed. As to the effects of operation, he had formerly been over-generous to the surgeons in this class of cases, but in the last few years he had found it increasingly difficult to select the really operable cases. Of course, if the kidney caused ascites or other harmful symptoms by pressure or otherwise, it should be replaced, but for the most part he now found that operation was needed less and less often, since he had been treating the patients by rest, posture, etc. These patients are peculiar in the readiness with which they develop symptoms referable to the various organs. This can probably be accounted for in part by their lack of general vitality. Improve the vitality, and the symptoms disappear. The weight is the best guide as to the results of treatment. Nearly all the patients present symptoms of gastric neuroses and are under weight. In most cases the loss of weight has been gradual. With an increase in weight the symptoms improve; when it is stationary or falling they remain *in statu quo* or get worse.

Cyclopædia of Current Literature

ALUM BATHS IN TYPHOID FEVER.

The writer has used alum baths in typhoid fever so as to minimize the skin infection. The procedure is carried out as follows: One pound of powdered alum is quickly dissolved in a little hot water and added to the tub during the filling. With the average tub of 450 to 500 litres, this makes approximately a 1 to 1000 solution. The alum is sent to the ward from the pharmacy in pound packages, so that the time for preparing the bath is not

appreciably lengthened. The cost is about 4 cents per bath. The patient is bathed in the alum solution just as in ordinary water and experiences no inconvenience from the presence of the drug. The only noteworthy changes in the skin are a slight increase in desquamation during convalescence and a decided diminution in the incidence of skin complications of all sorts (amounting to 50 per cent.). In these cases the care of the skin is the same in all except for alum baths. It is not sug-

gested that the alum baths can replace the rigid care of the skin in the ordinary way, but that with them the frequency of skin complications may be still further reduced. A. R. Boggs (Journal of the American Medical Association, June 25, 1910).

ASTHMA, SPASMODIC, HYPODERMIC INJECTIONS OF ADRENALIN IN THE TREATMENT OF.

The author emphasizes the value of adrenalin, given by hypodermic injection, in instantly relaxing the spasm of asthma, and presents histories of some of the cases in which this treatment was used. In the first case, for example, that of a woman 30 years of age, with asthma of 6 years' standing, the first injection of 10 minims of the 1 in 1000 solution caused a paroxysm promptly to disappear and prevented a return of the trouble for seven days, whereas before this spasmodic attacks had been present nightly. After the second injection the effect did not persist so long, and for a time the patient employed every night an injection of 6 minims of the solution in order to cut short the spasmodic attacks. After four or five weeks of this, the incidence of the asthma became much less frequent, and the general strength of the patient was greatly improved. The use of adrenalin by the mouth, up to 15 minims of the solution, was also tried in this case, but without result.

In a second case, the incidence of the attacks was not much altered. After the first month of treatment, during which two injections of 4 or 5 minims were taken daily, the use of adrenalin was reserved for severe and persistent paroxysms, a burning powder of stramonium being the remedy first used in ordinary mild attacks. The third pa-

tient, who suffered yearly from hay fever with asthma, employed adrenalin injections every evening for a month in the hay season, and succeeded in warding off the trouble almost completely. Brian Melland (Lancet, May 21, 1910).

BLADDER, NECROSIS OF, WITH EXFOLIATION.

Necrosis of the bladder occurs as a result, primarily, of interference with the circulation of the organ, aided by bacterial infection. The interference may be produced by mechanical pressure outside the bladder or by bacterial inflammation within the bladder wall. The condition is commoner in women than in men. The clinical symptoms are vague. The most constant feature is the ammoniacal and fetid condition of the urine, which contains albumin, pus, blood and quantities of detritus. In some cases bits of membrane are passed, containing bladder tissue from which the diagnosis can be made. The urinary symptoms include retention, dribbling from overflow, and also those of acute cystitis. Retention (associated with cystitis), which cannot be relieved by catheterization, should excite suspicion. There is a typical cystoscopic appearance by which the diagnosis can be made if the examination is made at a certain time. The prognosis as to life is, on the whole, good in women, though in severe cases permanent injury to the urinary function will result. In men the prognosis is good if the membrane is removed.

The treatment is symptomatic at first, the ordinary internal and local measures for cystitis being employed. Where retention or difficult micturition is present, constant drainage should be established. If this fails drainage by

cystotomy is indicated. In men the only hope of recovery lies in operation. Although the diagnosis has rarely been suspected, the symptoms are so severe as to demand an exploration. The suprapubic route is preferable. All the male cases operated on have recovered, with one exception. In women spontaneous cure by passage of the membrane occurs in a large proportion of cases, operation being only occasionally required. The author reports 2 personal cases, and gives a list of 106 previously reported cases of bladder necrosis, with or without exfoliation. R. F. O'Neil (Surgery, Gynecology and Obstetrics, May, 1910).

CARCINOMA OF THE STOMACH WITH METASTASES IN THE BONE-MARROW.

The occurrence of cancer metastases in the bone-marrow is followed in most instances by the appearance of large numbers of erythroblasts and myelocytes in the blood, usually associated with a high color index and megalocytosis. Where there is reason to suspect the presence of cancer, the constant presence of large numbers of erythroblasts and myelocytes in the blood, with megalocytosis and a high color index, should suggest bone metastases.

The presence of bone pains favors the diagnosis, but the greatest importance is attached to the condition of the blood. The blood picture is due to the stimulation of the bone-marrow by the metastatic tumors. The manner in which they act cannot at present be determined. Probably both defective hæmogenesis and increased hæmolysis take part in the production of the anæmia. A. W. Harrington and J. H. Teacher (Glasgow Medical Journal, April, 1910).

CONSTIPATION IN INFANTS.

Locomotion of the intestinal contents through the colon in infants is normally at a disadvantage as compared to that in adults because the colon is relatively longer, more convoluted, has freer peritoneal attachments and is muscularly weaker. In overfeeding and flatulent distention it can become not only permanently dilated and greatly convoluted, but also kinked and dislocated. Constipation from want of voluntary effort is a source of trouble during infancy, in addition to the forms of constipation which also prevail among adults. The younger the infant the more important it is to prevent this disturbance of function. Infants who have been trained to perfect regularity in this respect before they were two months old by skilled and persevering nurses pass through the whole of infancy without requiring any unnatural stimulus for daily evacuation. The cardinal measures for the prevention of constipation in infants may be given as follows: 1. Never employ aperients, purgatives, enemata or suppositories, especially during the first few weeks of life. 2. In breast-feeding make certain by means of the "test-feed" that there is neither underfeeding nor overfeeding; correct quantitative and qualitative defects by supplementary feeding. 3. Induce regularity of habit by systematic training.

In the curative treatment of constipation in infants the author advises against the old method of giving additional feedings of cream, which is very liable to induce symptoms of fat indigestion, foremost among which is a condition of aggravated constipation. Unless the evidence is clear that the percentage of fat is below the nutritive requirements, this plan has little to

commend it. The treatment advocated is summarized as follows: 1. In all cases the exciting cause, such as deficiency or excess of food, or qualitative faults, must be treated by appropriate means. 2. The motions may be softened by free doses of petroleum emulsion, and in aggravated cases by small doses of drugs which promote intestinal secretion and the outflow of bile (sodium salicylate, sodium citrate, vinum ipecacuanhæ and ammonium iodide). 3. Inertia of the bowel may be treated by massage, or massage combined with electricity, and in aggravated cases by cascara sagrada and nux vomica. 4. In cases in which a chronic colitis complicates the condition, a preliminary course of irrigation (Plombières's method) may be employed. 5. In cases in which the motions are light colored and offensive, liquor pancreaticus (B.P.) may be added to the petroleum. 6. Regularity of habit must always be enforced by careful and systematic training. E. Pritchard (Practitioner, May, 1910).

DIABETES, EAR, NOSE AND THROAT SYMPTOMS IN.

Owing to the many manifestations of diabetes mellitus, the author thinks it surprising that the various changes which take place in the mucous membrane of the nose, throat and ear are so frequently unnoticed, or so readily passed by without even suspicion of the existing condition, but admits that this may be due to their usual trivial character, or to the non-existence of any definite array of symptoms indicative of this malady. However, in spite of the absence of any definite diagnostic signs, certain changes are considered more or less common. The inflammatory condition around the teeth and

the delay in healing of the gums after extraction of teeth are sometimes noted. This is due not so much to the acidity of the oral secretions as to the presence of sugar in the blood encouraging pathological changes and the tendency to local infection. Aphthous stomatitis, thrush, a large red tongue, at times covered along the center by a black fur, hyperæmia of the mucous membrane of the mouth, which at times looks glazed and feels dry, are frequent symptoms. When acetone is present in quantities the odor of acetic ether can often be detected on the breath. The patient may also be conscious of a sweetish taste, although the senses of taste and smell are usually blunted.

The pharynx also shows involvement. As the secretions become adherent to the mucous membrane, a glazed or varnish-like appearance to the throat is produced. It is believed by some writers that a pharyngitis sicca associated with mental hebetude, lassitude, furunculosis and cramps in the calves of the legs is positive proof of diabetes mellitus. The ulcerations of the throat, which usually occur on the tonsils, pillars and posterior wall of the pharynx, are rather painful, but they heal readily in contrast to a tuberculous lesion, with which it is sometimes confounded.

The only characteristic nasal symptom so far noted occurring with any degree of certainty is the slight cyanotic reddening of the nose, resembling an alcoholic with a weak heart, although the author believes that there are numerous other symptoms which have not as yet been worked out, such as hyperæmia, hypersecretion, itching, sneezing, and paræsthesias.

Furunculosis in the external auditory canal is more or less of a common con-

dition; cyanosis as noted above in the nose is to a certain degree characteristic; chronic diffuse external otitis, eczema and suppuration are sometimes seen, while gangrene of the auricle occurs on rare occasions. A bleb of a dusky purple hue and about the size of a millet seed on the drum is sometimes indicative of a hæmorrhagic or a serous effusion which is associated with a kidney lesion. A sudden otitis media with no apparent cause is suspicious evidence of an associated suppuration of the labyrinth and is not infrequently found in diabetes mellitus. Otto J. Stein (*Journal of the American Medical Association*, March 26, 1910).

DIABETES, THE URINARY FINDINGS IN.

Not infrequently the urine of menstruating women will reduce the various copper solutions. The author is convinced that the reduction is due to the menstrual blood mixed with the urine. Caution is therefore advisable in concluding on the presence of diabetes under such circumstances. Henkel has shown that very often lactose is excreted in the urine, not only during the latter months of pregnancy and the puerperium, but also whenever the secretion of the mammary glands is blocked from any cause. The lactose reduces copper solutions and may be mistaken for diabetic glycosuria. Such an error is easily avoided, however, by performing in addition to the Fehling a simple fermentation test, for yeast does not ferment lactose.

From the urinary findings important practical deductions can be made as to the etiology of the disease. The idea is prevalent that if a urine has a specific gravity of 1020 or under no glucose can be present; but, in those cases where the resorption of nitrog-

enous material from the digestive tract is below normal, the specific gravity is always low—about 1012. The severity of the disease cannot be measured by the amount of sugar eliminated. There is a class of cases which show but mere traces of glucose, and yet run a rapid and fatal course. The total nitrogen of the urine is increased physiologically in diabetes, owing to the increased amount of proteid ingested. It becomes pathologic when, in addition, the body albumin is excreted, which occurs with a high sugar output. An excretion of 3 to 6 grams of ammonia daily is common in diabetes, as against the average of 0.7 gram excreted by a normal individual. This is an attempt on the part of Nature to protect the native alkalinity of the tissues by neutralizing the acids produced during the acid intoxication. The ammonia value becomes especially high when coma supervenes, and its determination gives an accurate estimation of the acidosis present, and one more easily arrived at than the direct estimation of the acidosis itself.

It has recently been proved that beta-oxybutyric acid and its derivatives, diacetic acid and acetone, originate chiefly from the lower fatty acids of the organism and of the food. The carbohydrates provide the oxygen necessary for complete oxidation of fat into carbon dioxide and water. Deficiency of carbohydrates leads to defective fat metabolism, with resulting acetone formation. In mild cases the addition of moderate amounts of carbohydrates to the diet generally causes a diminution in the excretion of acetone and beta-oxybutyric acid when present. From these facts valuable deductions can be made for the regulation of the diet when there are evidences of acid

intoxication. The presence of acetone bodies in the urine is a very useful measure of the intensity of the diabetes; thus in the first stage of the disease acetone only occurs, in the second stage both acetone and diacetic acid, and in the third stage beta-oxybutyric acid in addition. Beta-oxybutyric acid or diacetic acid may be present for days before coma supervenes and should always serve as a danger signal of its approach. The increase in the ammonia output is equally important. The sudden marked diminution or disappearance of glucose in a urine previously loaded with sugar, the sudden appearance of innumerable granular and hyaline casts, rendering the urine turbid even on voiding, and the appearance of albumin, are significant of the approaching danger. Recently the value of the urinary findings in diabetes has been widened by the discovery of Cammidge's crystals, a positive reaction in a given case being suggestive, according to Cammidge, of the pancreatic origin of the disease. W. Lintz (Journal of the American Medical Association, March 12, 1910).

GASTRIC HYPERSECRETION, CLINICAL SIGNIFICANCE OF.

Hypersecretion of gastric juice invariably depends upon an organic lesion, which usually takes the form of a chronic ulcer of the stomach or duodenum, calculus in the gall-bladder, or latent disease of the appendix, although it is probable that future investigations will prove that pancreatic calculus, tuberculosis of the cæcum, and carcinoma of the appendix are also capable of producing it. Of the last named, one case has already come under observation. This disorder of secretion is merely the physiological expression

of a reflex irritation of the gastric glands and is therefore not entitled to be regarded as a disease. The continuous flow of hyperacid gastric juice, whatever be its cause, always excites severe inflammation of the stomach, and is very liable to be followed by ulceration of that viscus or the duodenum. This secondary ulceration is at first superficial in character and may not be demonstrable on examination of the exterior of the stomach. Minute hæmorrhagic erosions, capable of producing alarming hæmatemesis and melæna, are usually associated with, and caused by, this abnormality of the gastric secretion.

Latent disease of the appendix as the result of former acute inflammation is accompanied by a peculiar form of digestive disturbance. In this condition subacidity of the gastric juice, with an absence of free HCl, is the rule. With the exception of hæmorrhage, all the symptoms that are regarded as pathognomonic of duodenal ulcer are in reality due to the gastric hypersecretion that always accompanies this lesion. It follows, therefore, that a severe example of hypersecretion may, as a rule, be safely diagnosed as a case of duodenal ulcer. Contrary to the usual belief, carcinoma of the pylorus is sometimes accompanied by extremely well-marked hypersecretion. In such cases the morbid growth develops with extreme rapidity, and violent hæmorrhages, due possibly to digestion of the tumor, are exceptionally frequent. W. S. Fenwick (Lancet, March 12, 1910).

KAVA AND ITS EFFECTS IN GONORRHOEA.

The oily substance "cavaine," isolated from the *Piper methysticum*, or kava, has the power to subdue pain at the ends of the peripheral nerves. It also

exerts an influence, perhaps not so great, over the development of micro-organisms. Taken internally in one- or two-drop doses, it causes warmth and a sense of appetite, and imparts to the breath a penetrating odor of pepper,—an odor which may even be detected in the urine. It is a gentle diuretic, and acts directly upon the ends of the nerves of the urethral mucous membrane, causing a soothing or partially anæsthetic effect, in virtue of which the use of injections is facilitated. From the presence of cavaine in the urine also depends the healing quality of the latter, and the absence of decomposition, so that nothing is afforded that can favor the growth of gonococci. The use of cavaine has come to be restricted almost entirely to the treatment of gonorrhœa and acute cystitis. Neisser is inclined to give it the first place among the internal remedies for the former affection, though he doubts its being sufficient to destroy the gonococcus. Doubtless, as a destroyer of active cultures, cavaine is not equal to many, but as an antiseptic, as a means of interfering with the growth of germs, and as a means strong enough but not so strong as to be dangerous, it is considered adequate. According to Pohl, certain plants remarkable for their odor and bitter properties possess the power of increasing the number of leucocytes in the circulating blood. Kava, as one of the *Piperaceæ*, falls under this denomination. The dose of cavaine is 0.02 gram ($\frac{3}{10}$ grain), four or five times a day. Two doses may be taken with profit at the noonday and evening meals. The author presents brief histories of four illustrative cases in which the use of cavaine capsules in conjunction with injections of $\frac{1}{4}$ to $\frac{1}{2}$ per cent. protargol gave good results.

The most prominent effects were sedative and antiseptic. The digestive functions were not deranged by the remedy. P. Bartholow (New York Medical Journal, February 19, 1910).

NEPHRITIS, THE IMPORTANCE OF A LOW PROTEIN DIET IN.

The writer holds that, since a cardinal principle in the treatment of nephritis is to spare the kidneys, a diet low in protein substances must be prescribed. The old-fashioned milk diet necessitates the ingestion, if enough nutriment is to be given the patient, of an amount of protein that is considerably above the needs of the normal individual. Owing to the length of the treatment in chronic nephritis, it is as important, however, to supply a diet of sufficient caloric value as it is to limit the protein. This can be done only by the quantitative as well as the qualitative regulation of the patient's food. A practical knowledge of food values, such as is best supplied through tables showing the equivalent amounts of food that contain a given amount of protein, is therefore necessary. H. D. Arnold (Transactions of the American Medical Association, June 9, 1910).

PERICARDITIS, WITH EFFUSION, A POSSIBLE DIFFERENTIAL SIGN BETWEEN CARDIAC DILATATION AND.

The writer considers that it is often difficult or impossible to differentiate an extremely dilated heart from a large pericardial effusion. He has noted, however, that whereas in cases of enlarged heart the sternum is depressed, the right lobe of the liver elevated with reference to the overlying interspaces, and the right lung elevated as well as pushed outward and backward, thus giving a high position of the liver asso-

ciated with a narrow band of lung-liver relative dullness, in pericarditis with effusion, on the contrary, the liver is depressed, and the right lung pushed outward and backward, more than it is upward, thus giving a low position of the liver with the same narrow band of lung-liver relative dullness. The size of the liver itself is of no material importance in this connection. W. J. Calvert (Transactions of the American Medical Association, June 7, 1910).

POLIOMYELITIS, ACUTE ANTERIOR,- EARLY DIAGNOSIS OF.

Headache is ordinarily the first symptom complained of. It is not as severe as the headache of meningitis and the author has never seen it accompanied by delirium in an early stage. Vomiting is another early symptom and may be so persistent as to cause much discomfort; it is not of the "projectile" type. Some degree of spinal rigidity, without retraction of the head, accompanied by more or less pain in the cervical or lumbar regions, aggravated by lateral rotation of the head or by anterior flexion of the spine, is also one of the cardinal features. There is a feeling of extreme weakness, wholly out of proportion to any ordinary cause of fatigue to which the patient has been subjected, and which persists for two or three weeks, disappearing gradually. The pulse is rapid and weak, with a peculiar lack of tension, the latter characteristic becoming more pronounced as paralysis approaches or develops. An elevation of temperature, ranging from the normal to 102.5°, rarely to 103°, and subsiding without treatment, usually in from three to five days, is also noted.

Of all these symptoms, spinal rigidity and pain are the most important, and

afford about the only criterion from which to judge of the present or prospective severity of the case. If rigidity is slight and the pain not distressing, a favorable outcome may be confidently expected; if these symptoms are pronounced, they may be regarded as danger signals. When they are mainly or wholly limited to the lumbar region, the paralysis, if any follows, will almost certainly be below that point. Great rigidity and pain in the region of the neck, however, are of bad omen, since they portend probable paralysis of the muscles of respiration. In cities where poliomyelitis prevails or is likely to appear, early diagnosis will be facilitated if physicians notify parents as generally as possible that the initial stage of the disease causes little disturbance and that treatment, to be effective, must be commenced early. G. W. McIntyre (St. Paul Medical Journal, May, 1910).

RHEUMATISM OF CHILDHOOD, A NEW SIGN IN THE.

The writer has noticed so frequently an enlargement of the thyroid gland in cases of rheumatism in children that he claims for it a place as a diagnostic sign in this condition. The time when the thyroid enlargement was first noticed varied. In some cases it preceded all other manifest signs of the disease; in others it appeared as the fourth or fifth link in the rheumatic chain, and in others still it was found to persist along with established chronic endocarditis after all other rheumatic manifestations had disappeared. The enlargement of the thyroid was sufficiently pronounced to give an unnatural fullness to the neck when inspected from the front, and when viewed laterally the sharp contour of the gland was

unmistakable. It is recommended that in a child with thyroid enlargement the past history be carefully taken with special reference to "growing pains," torticollis, stiff hamstrings and recurrent attacks of tonsillitis. The family history as regards rheumatism should be inquired into, a careful physical examination of the heart should be made, and signs of chorea sought. J. R. Clemens (*Archives of Pediatrics*, May, 1910).

**RHEUMATISM, CHRONIC (FIBROSITIS),
THE COMMONER FORMS OF, AND
THEIR TREATMENT.**

The conditions referred to are the more or less chronic affections which are generally labelled "rheumatic," but which undoubtedly are not the sequelæ of acute rheumatism and are in no sense connected with it. The essential pathological change is, in general, an inflammatory hyperplasia of the white fibrous tissue in various parts of the body. The articular structures proper are not primarily affected, the parts implicated being the fibrous tissues of the joints, muscles, and bones, especially the aponeuroses and insertions of the muscles, fasciæ, ligaments and periosteum. Such affections cause pain and stiffness in these structures, and are very apt to recur. The pain is especially aggravated by any sudden movement. The fibrositis may completely disappear, but recurrences are common, and if not suitably treated the thickened fibrous tissue remains as indurations in various situations. The commonest causes of local fibrositis are: (1) Cold, damp and wet; (2) extremes of heat and cold; (3) local injuries, as by sudden and severe strain on tendons and ligaments; (4) absorption of irritating toxins from the alimentary tract; (5)

tonsillitis and pharyngitis; (6) influenza; (7) febricula ("feverish cold"). The forms of fibrositis most commonly seen are: (1) Muscular rheumatism, involving especially the muscles of the neck, those of the shoulder and upper arm (brachial fibrositis), the intercostal muscles, or the lumbar muscles (lumbago); (2) Dupuytren's contraction; (3) fibrositis of the plantar fascia; (4) pads upon the finger joints, usually confined to the dorsal aspects of the proximal interphalangeal joints, and apparently unrelated to rheumatoid arthritis, or gout. Chronic villous synovitis, though strictly not a form of fibrositis, may be referred to here because its correct treatment is similar to that of the other conditions mentioned. It is purely local, usually occurs in the knee, and is characterized by crepitus or creaking on movement and by pain and tenderness on use. It is often mistaken for rheumatoid arthritis, but there is no erosion of cartilages, no eburnation of the bones, and consequently no bony grating.

In the treatment of an acute fibrositis, a saline aperient should always be given at the onset of the attack, and repeated as necessary. Salicylates are of little curative value, though aspirin is of decided use for the relief of pain in severe cases. Potassium iodide seems to exercise a direct effect in removing the hyperplasia and serous exudation in the fibrous tissues, and should always, if possible, be given in full doses of 10 or 12 grains, combined with tonics such as nux vomica or the compound glycerophosphate syrup. If symptoms of iodism result, one of the organic iodine compounds, as iodipin, may be tried. Fibrolysin was employed in several cases of thickening and contraction of fibrous tissues in different

forms of fibrositis and arthritis, as well as in several cases of Dupuytren's contraction of the palmar fascia, with good results in about two-thirds of the cases. It should be injected under strict antiseptic precautions into the deep subcutaneous tissues of the upper arm, each arm being injected alternately. It is necessary to give 30 to 40 injections in all, and they should be administered on alternate days. After 20 injections have been given movements and massage of the affected fibrous tissues should be commenced, as it is at this stage that the thickened tissues usually begin to soften and are then likely to stretch if movements and massage are employed. It is essential that in cases of stiffened and distorted joints fibrolysin should not be used while any active mischief is proceeding within the joints. In the treatment of pads upon the finger-joints the only other procedure found useful besides fibrolysin was the nightly inunction of a 25 per cent. iothion ointment, which caused softening and partial absorption of the thickened tissues.

In the early stages of an acute fibrositis hot fomentations are useful. Afterward one of the best external applications to use is a mixture of equal parts of chloral hydrate, camphor, and menthol. These three substances form a liquid, which should be painted over the painful area, and then gently rubbed in with the fingers. Another useful procedure is to paint the painful area with tincture of iodine and then apply a hot linseed poultice or very hot fomentation. In the later stages the aconite, belladonna, and chloroform liniment applied on lint is frequently most beneficial. In a very localized fibrositis counterirritation, especially by the thermocautery, is sometimes of

great use. Rest of the affected parts and diaphoresis are two of the most important procedures in the treatment, the latter being especially beneficial at the onset of an attack. Heat is of great value, and if employed early will frequently abort an attack. If it is to be applied to the whole body the electric light cabinet is most convenient and valuable; the combination of the heat and light rays is far superior in its effects to dark heat. In localized forms, especially in lumbago and chronic villous synovitis of the knees, the most effective local treatment is the employment of superheated air, lasting for 15 or 20 minutes, immediately followed by ionization (cataphoresis) for 10 to 15 minutes. In chronic joint cases and chronic lumbago the author orders for ionization a 2 per cent. solution of iodide of lithium, and directs that the negative ion (the iodine) should be driven into the tissues. In acute lumbago a 2 per cent. solution of sodium salicylate should be used at the first sitting or two in order to relieve the pain. In the later stages of a muscular fibrositis a rapidly interrupted faradic current is beneficial, but it should be so weak as not to cause any muscular contraction.

Massage is very useful in the later stages, but it should not be employed until it causes no pain, and should be very gentle at first. During the painful stage of muscular rheumatism rest of the affected muscles is required, but later on exercises of the muscles are of great benefit. They should be performed on rising in the morning and followed by a cold or tepid bath and brisk rubbing of the skin with a rough towel. Unlike gout, no special dieting is required in these affections; moderation should be the keynote. Porous

linen underwear is the most suitable for rheumatic individuals, as it allows free evaporation of perspiration and so prevents a more or less sodden garment from remaining in contact with the skin, which so frequently happens with those who wear woolen underclothing. A. P. Luff (*Lancet*, March 12, 1910).

SYPHILIS AND AORTIC INSUFFICIENCY.

In a series of twenty-two cases of aortic insufficiency (clinical diagnosis only), in which the Wassermann and Bauer-Hecht reactions were performed, seventeen cases, or 77 per cent., gave positive results. Almost none of the patients who showed a positive reaction remembered having had infectious diseases and most of them likewise denied having acquired syphilis. The negative cases were all below twenty years of age and each gave a history of former repeated rheumatic attacks. The investigators are of the opinion that syphilis is a factor in the pathogenesis of a large proportion of cases of aortic insufficiency, and recommend that the Wassermann reaction be regularly tried in the latter condition, in order that specific treatment may be promptly begun when required. Bruckner and Galasenco (*Bulletin médical*, February 2, 1910).

TETANUS TREATED WITH SUBCUTANEOUS INJECTIONS OF MAGNESIUM SULPHATE.

So long as toxin is being formed at the seat of infection, injections of this salt do not prevent its absorption by the nervous system. It only acts by controlling the spasms through its paralyzing effect on nervous tissue, and by conserving the patient's strength, gives him time to form his own anti-toxin. The author believes that, if both

an emulsion of rabbit's brain and magnesium sulphate were injected at the same time, the patient would have a better chance of recovery, as the brain emulsion would prevent or diminish absorption of the toxin by the nervous system, while the magnesium salt would diminish the spasms produced by the toxin already fixed in the nerve-cells.

A case of tetanus is reported in which the use of magnesium sulphate was followed by recovery. The patient, a coal-miner, 21 years of age, was admitted to the hospital three weeks after receiving a small scalp-wound from a kick. The symptoms had commenced six days before with pain and stiffness in the abdominal wall and back. On the morning of admission a convulsion had taken place, and general rigidity soon appeared, together with pain, hindered breathing, cyanosis, and occasional loss of consciousness. The following day he received a subcutaneous injection of 10 cubic centimeters of a 10 per cent. sterilized solution of magnesium sulphate, 5 cubic centimeters being introduced into each thigh. Soon after, he obtained an hour's sleep, the first in forty-eight hours. The injections were repeated every four hours, night and day, for two days, and though painful in themselves, gave immense relief. At the end of this time the comparatively slight and more frequent spasms had almost entirely disappeared, and the severe spasms been reduced to one in every five to twelve hours. The dose of the solution was then rapidly increased to 20 cubic centimeters, injected as before in two separate parts of the body, and this was continued every four hours for four days. There were now but one, or at most two, spasms in the twenty-four hours, and the rigidity of the legs was passing off.

The injections were then stopped. On the following day an erythematous rash appeared over the shoulders and gradually spread until the greater part of the body was covered; it disappeared in a week. The last severe spasm was recorded three days after the injections had been stopped, and rigidity gradually disappeared. The patient left the hospital five weeks after admission. Throughout his illness he could swallow without difficulty, and as his thirst was great, especially during and for a few days after the administration of the injections, he was able to take a large quantity of nourishment. On a daily average he took 8 to 10 pints of fluid, consisting of strained soup, milk, water, and an occasional beat egg. The objection to the magnesium sulphate treatment is the pain produced by the injections, but this could probably be largely overcome by using larger quantities of a weaker solution. Peter Paterson (*Lancet*, April 2, 1910).

TRACHELORRHAPHY, AN IMPROVED METHOD OF.

The author refers to the frequency of unsatisfactory results after this procedure as ordinarily executed. The trouble with trachelorrhaphy is that the site of the repair is apt to be so thin that it cannot possibly withstand another labor. This is due to the faulty method of through-and-through stitching, by which the mucous membrane within the canal is drawn almost into apposition with that covering the cervix. While the denuded lips were from one-half to three-quarters of an inch wide, the repair is only from one-eighth to one-quarter of an inch. A repair of the cervix, the writer believes, should follow the method of layer suture so successfully used in closing the abdo-

men. He uses a continuous suture in two layers. The needle is entered through the outside of the cervix near the angle of the wound, and carried deeply back and forth in the muscular layer of the anterior and posterior lips, coming out finally at the opposite lip to that from which it was started. Each stitch is pulled up as it is taken, broadly approximating the depth of the wound. The superficial layer of the cervix is then drawn together by running back the same continuous suture, coming out opposite the starting-point, where the two ends are tied together. An amputated section of a cervix so repaired shows that it is equally thick in all parts. No. 1 chromic catgut is used, no tension on the stitches being required for complete apposition.

In many cases where the cervix shows on one side a slight laceration without scar tissue, and on the other a laceration causing hypertrophy, eversion and erosion, a deep, wide, unilateral operation is much better, the author finds, than a bilateral repair. W. L. Wallace (*Journal of the American Medical Association*, April 9, 1910).

TUBERCULOSIS, NUCLEIN BY INTRA-VEINUS INJECTION IN.

The value of nuclein given intravenously in tuberculosis depends not only upon the production of a leucocytosis, but even more upon its effect in building up erythrocytes and hæmoglobin. The leucocytosis may reduce the danger from mixed infection, but in his experience with these cases the author has become more and more impressed with the importance of the secondary anæmia and the necessity of combating it. He employs a nuclein solution containing approximately 6 grains of sodium triticonucleinate to the ounce,

standardized to 1 milligram of organic phosphorus to each cubic centimeter. As a vehicle for this nuclein, a solution made up as follows is used: Calcium chloride, 0.25; potassium chloride, 0.10; sodium chloride, 9.00; water, 1000. The injections are made into the median cephalic or median basilic vein, under strict asepsis. An ordinary infusion bottle, with six feet of one-fourth inch rubber tubing and a No. 18 or 20 saline solution needle, may be used. The bottle and tube are sterilized, the solution introduced, allowing 1 ounce for the bottle and 1 ounce for each 20 pounds of weight of patient, and the bottle, tube and needle, all attached, then placed in a water bath, which is brought to the boiling point. This will bring the infusion to about 110° F. The amount of nuclein solution to be used is then placed in the bottle and thoroughly mixed with the salt solution. An elastic ligature is applied six inches above the elbow, the area to be injected sprayed with ethyl chloride, and the needle then introduced at an angle of 45° through the skin into the lumen of the vein. With the infusion bottle at the height of the patient's head, when in a sitting posture, about twenty minutes are required to introduce 6 ounces. With care, as many as sixty injections could be given in one vein in the space of one inch, without injury to the vessel. The dose of nuclein must be regulated according to the observed effect on the blood.

Of 48 cases thus treated, 5 ended fatally. In no case where favorable results could not be obtained did the treatment prove harmful. In the favorable cases the injections caused a decided increase in the hæmoglobin percentage and the number of red cells; the specific gravity of the blood was

brought up to, or near, the normal. All the cases were such as are met with in private practice. Fifteen of the 48 cases are reported by the author, the others not having been under observation a sufficient length of time to warrant passing judgment upon them. Of the fifteen, nine recovered, four showed more or less decided improvement, and two died. The results of the treatment are summed up as follows: If there is not a net increase in the hæmoglobin percentage in two weeks' time, any permanent result is not to be expected; but even where there is no such increase, the treatment aids in keeping these patients upon their feet. With a constant increase in the hæmoglobin, when it has reached 85 to 100 per cent. and remained there for one month after cessation of all treatment, the patient may be declared well. E. P. Ward (Medical Record, March 26, 1910).

TUBERCULOUS GLAND: ITS SIGNIFICANCE AND TREATMENT.

The earliest indication of spreading involvement of lymphatic glands should be watched for in children, especially distribution downward from the extra-tonsillar gland into the supraclavicular triangle. Such process should be regarded as almost certainly of tuberculous nature. If in doubt the tuberculin test (cutaneous or percutaneous) should be used. Treatment with tuberculin should be begun as soon as possible, at the same time carefully cleansing the throat and correcting the child's faulty environment. If incidentally one or other gland suppurate, evacuate in simple fashion, continuing the use of tuberculin.

There is ample reason for the statement that if such procedure be followed, the glandular disturbance will com-

monly yield, grosser deformity will become rare, and, what is vastly more important, the risk of the spread of tuberculous infection to internal organs will be greatly lessened. R. W. Philip (*Lancet*, July 2, 1910).

TYPHOID FEVER, BLOOD-CULTURES IN THE DIAGNOSIS OF.

Bacilli are present in the blood in every case of typhoid fever, their destruction with liberation of endotoxins probably causing the disease. The introduction of the bile culture media by Conradi, Kayser and others has furnished us with an almost certain means of diagnosis in the first week of the disease. Coleman and Buxton's 1602 collected cases in which blood-cultures were made gave 89 per cent. positive in the first week; 73 per cent. in the second; 60 per cent. in the third; and 39 per cent. in the fourth. In the author's 23 cases, 100 per cent. (5 cases) were positive in the first week; 90 per cent. in the second; 37.5 per cent. in the third. The blood-culture and the Widal agglutination reaction are thus in a certain sense complementary, the former becoming less reliable, the latter more reliable, as the disease progresses. Combination of the two methods will permit certain diagnosis in nearly every case at any stage. Bacilli have even been recovered from the blood four days before the appearance of symptoms. One advantage of the culture method is its definiteness as compared with the Widal test, in which doubtful reactions are of frequent occurrence. It is also valuable in paratyphoid infections, which usually fail to give the agglutination reaction with typhoid bacilli, but furnish cultures distinguishable from the typhoid by the action produced on certain sugars.

Bacilli disappear from the blood in convalescence but reappear in a relapse; the culture method is thus also useful in distinguishing a true relapse from a febrile complication.

The technic is so simple as to render the method available in routine clinical work.

The blood may be obtained from a skin puncture or a vein, the latter being preferable because of the larger quantity of blood secured and the avoidance of contamination by bacteria from the skin. The skin at the bend of the elbow is prepared as for a minor operation or simply rubbed with 80 per cent. alcohol, a bandage applied to the upper arm, and a hypodermic needle attached to a syringe introduced into any prominent vein, when the blood generally rises at once into the syringe. It is usually easy to secure 2 to 5 c.c. of blood, often more. The bandage is then loosened, the needle withdrawn, and the blood allowed to run into the culture-tube. In the other method a puncture of the ear is made as for a blood-count and the blood pressed out until 1 or 2 c.c., seldom more, have been obtained. It has been proved that the results are little, if at all, inferior, in the first week, to those secured by puncturing a vein. The culture-medium used by the majority of workers is simple ox-bile or pig-bile sterilized in the autoclave. The author uses a 12 or 15 per cent. solution of Squibb's inspissated ox-gall, sometimes adding 1 or 2 per cent. of peptone. When a Gram-negative, motile bacillus is found, it may be reported at once as very probably the typhoid bacillus; but further tests should always be carried out, such as gas formation in dextrose media and indol production. The time required for detection of the bacillus is

usually 24 hours. J. C. Todd (Journal of the American Medical Association, March 5, 1910).

TYPHOID FEVER IN CHILDREN.

The writer presents a detailed study of 550 cases of enteric fever in children ranging in age from two to fifteen years. The cases were observed in the period between the years 1872 to 1908. With regard to the symptoms the author observes that the fever in 279 cases was recorded as remittent, in 24 intermittent, in 3 irregular, and in 2 atypical; it terminated by lysis in 241 and by crisis in 19. Chills were recorded in 73 cases, 13 being at the outset. Rose-spots were present in 133 cases only, but as about 20 per cent. of the cases were negroes the percentage is not accurate. Five cases showed ulceration of the mouth, and 21, adenitis and parotitis. Diarrhœa was of infrequent occurrence after the first stage, and when present was usually controlled by change of food. Hæmorrhage occurred in 9.8 per cent.; of these 50 per cent. died. Meteorism and tympanites were noted in 14 cases. Abdominal tenderness and gurgling were not as often observed as in the ordinary diarrhœa of children, and the author regards these symptoms in the right iliac fossa as of little clinical value. There were 17 cases (3 per cent.), with perforation, all of which were fatal; three children were operated when *in extremis* and died a few hours later. Enlargement of the spleen was recorded in 149 cases. Epistaxis occurred in 225 cases (40.9 per cent.), in many of which it was troublesome. Bronchitis was present early in 31 cases and pneumonia was noted in 15 cases, one of which proved fatal. Delirium was present in 56.18 per cent. In 16 cases convulsions appeared dur-

ing the fastigium, and all were fatal. Post-typhoidal insanity occurred during convalescence in 9 cases which had run a mild course without delirium. They were all due to faulty nutrition and promptly recovered with improved general health. Otitis media supervened in 2.7 per cent. Deafness, when observed, always disappeared along with the fever. The diazo reaction was applied in 182 cases, with 40.1 per cent. positive; this test was abandoned several years ago. Albuminuria during the febrile stage occurred in 7.2 per cent., but usually disappeared in convalescence. Acute nephritis was noted in 15 cases (2.7 per cent.), 5 being fatal. There were 48 true relapses (8.7 per cent.), with 1 death. The Widal test was applied in 283 cases and was positive in 49 per cent.; this somewhat low percentage may have been due to imperfect methods. The rate of mortality was 11.8 per cent. Between the years 1872 and 1882 it had been 30.8 per cent., while in the five-year period ending with 1908 it was reduced to 7.9 per cent.

The methods of treatment employed at different periods are compared by the author. In 1899 the purely hydrotherapeutic treatment was begun and was strictly followed throughout the remainder of the decade, with the result that of 164 cases 18 died, giving a death-rate of 10.97 per cent. Four cases of the 18 died of pulmonary tuberculosis either during or directly following a typical course of enteric fever. In the last half decade, some slight changes in the treatment were made, the diet being augmented in nutritive value by the addition of cereals, eggs, and bread to the prescribed routine of milk and broths. The patient's ability to digest such

"soft food" was carefully watched and only two or three instances were recorded in which it had to be left off. Realizing that diarrhoea is the exception in the child with typhoid fever, one can safely venture, the author believes, in the use of liberal feeding. The majority will not only relish but digest and assimilate soft toast, cereals, and soft-boiled eggs. By this method there is no longer progressive emaciation until the skin hangs in folds, relapses become less frequent, convalescence is shortened, and complete recovery replaces prolonged invalidism. The Brand method was used only in three cases in the last period. Its beneficial effects have been demonstrated, but children do not require such heroic treatment; the sponge bath is quite as effective in reducing temperature, allaying nervous perturbations, and stimulating the emunctories. Intestinal irrigation was recently tried in a few cases, but its beneficial effect was not as yet evident. S. S. Adams (*American Journal of the Medical Sciences*, May, 1910).

VACCINATION, ANTI-TYPHOID.

Vaccination against typhoid undoubtedly protects to a very great extent against the disease. It is an indispensable adjunct to other prophylaxis among troops and others exposed to infection. It is very doubtful if there is an increase of susceptibility following inoculation. Vaccination during the disease, for therapeutic purposes, fails to reveal any evidence of a negative phase. The statement that vaccination should not be carried out in the presence of an epidemic is not justified by the facts at hand. The procedure is easily carried out and only exceptionally does it provoke severe general reactions. No untoward results have occurred in a

series of 3640 vaccinations in the army. Major F. F. Russell (*Bulletin of the Johns Hopkins Hospital*, March, 1910).

VASOMOTOR HYPERTONUS, REGIONAL.

In the writer's opinion a study of the cephalic, brachial and femoral arteries is required in making an estimate of the mass movement and distribution of the blood in the arterial system. The sphygmomanometer may be misleading unless controlled by palpation of the arteries. The resistance of hypertonic vascular walls to the pneumatic cuff must be reckoned with as well as the resistance offered by the endovascular blood-pressure. By palpation a distinction between vascular tension and endovascular pressure can be established. C. F. Hoover (*Transactions of the Amer. Med. Assoc'n.*, June 9, 1910).

VERATRUM VIRIDE.

From a study of the effects of Norwood's tincture in normal individuals and in cases of arteriosclerosis, hypertension of unknown origin, chronic nephritis, and combined cardiac and renal disease, the author concluded as follows: Emergency doses of 15 to 20 drops of Norwood's tincture, hypodermically, may be expected to give a prompt reduction of blood-pressure within six hours, often much sooner. In one case the pressure was reduced to 55 mm. Hg within three hours by fifteen minims. Doses of 10 drops by the mouth every three hours are sufficient and preferable in cases where haste is not required. After twenty-four hours the dosage may be further reduced, and by doing so the vomiting can usually be averted. After the administration of the veratrum viride was discontinued, the blood-pressure rose again within a few hours and was often normal within twenty-four to thirty-six hours. No un-

toward effects resulted. L. G. Heyn (Lancet-Clinic, April 16, 1910).

VOMITING, TREATMENT OF.

Even though the vomiting center be set into action by excitation from the periphery, the stomach always remains the predominant agent in the causation of this symptom. The center, once excited, remains in a state of hypersusceptibility, and nothing is so likely to throw it into action as those slight gastric derangements which under normal circumstances would pass off with impunity. Hence the stomach should never be neglected in the scheme of treatment. In the vomiting of acute illness such as typhoid fever and pneumonia the desideratum is to make a strict milk diet easily tolerated. Dilution and peptonization are calculated to achieve this, but the former lowers the nutritive value of the milk, and the unpalatability of peptonized milk is a serious disadvantage. It is better to use one of the preparations of dry casein. Thus the milk may be diluted with twice its amount of water and sanatogen added to the extent of 15 grains to the ounce of water. This brings the nutritive value up to that of pure milk and gives a mixture which is well tolerated owing to the fine subdivision of the casein as contrasted with the tough curds precipitated from pure milk. If even the diluted milk is not borne, the casein preparation merely mixed with water may be administered, and will probably be retained. As a last resort the dried casein may be used for rectal feeding, being very easily absorbed. When the habit of vomiting is once overcome in febrile disease by this method, the tolerance for an appropriate diet is rapidly established. In the persistent vomiting of gastric dilatation or with the gastric

catarrh of infants, washing out the stomach with weak boric lotion or alkaline solutions is an excellent method of treatment. Bismuth is a good remedy when vomiting results from gastric irritation, but under other circumstances is not efficient. Cerium oxalate has acquired a reputation in the treatment of the vomiting of pregnancy, but clinical experience generally fails to confirm this. Creosote, carbolic acid and iodine allay vomiting in cases of gastric fermentation by relieving the cause. The first two also have a local anæsthetic effect. Drop doses of tincture of iodine, well diluted in water, sometimes give satisfaction. Wine of ipecac and tincture of hydrastis have been credited with success in vomiting of pregnancy. Orexin tannate, in the dose of 5 to 12 grains two hours before meals, is recommended for the vomiting after opium, chloroform, etc. Aconite has to be given in large doses. Chloretone, in doses of 5 to 8 grains, is really effective when some painful local disease, such as gastric cancer, is responsible for the vomiting. One-third of a grain of cocaine will occasionally put a sudden stop to a bout of vomiting, and is one of the best remedies for seasickness. Hydrocyanic acid, if it acts, does so forthwith, and if it proves unsuccessful at first, should not be persisted with. On the other hand, in vomiting of reflex origin it is worth while to persist with bromide of potassium, and, indeed, to give it per rectum if the stomach does not tolerate it. For vomiting which is persistent and exhausting, opium is our most valuable remedy, given in the form of a hypodermic injection of morphine. It acts as a powerful sedative to the vomiting center, and affords relief as definitely as in a paroxysm of pain. J. Snowman (Lancet, March 12, 1910).

Clinical Summary

Of all practical articles and abstracts that have appeared in the Monthly Cyclopædia and Medical Bulletin during the current year.

Actinomycosis. DIAGNOSIS. Presence of corpora flava not essential to diagnosis of this condition. Repeated examinations of suspicious material often required. Only injection of actinomycotic pus or ingestion of material upon which actinomyces is grown will reproduce actinomycosis in animals; inoculation with pure cultures unsuccessful.

TREATMENT for actinomycosis of uterine appendages: 1. Extirpation and drainage. 2. For fistula, application of tribromphenol bismuth or irrigation with copper sulphate. 3. Potassium iodide internally, up to 75 grains daily. *Wagner.* Page 290

Addison's Disease. **TREATMENT.** Begin with 3 grains of desiccated adrenal gland three times daily after meals, and gradually increase the dose till temperature and pulse become normal; then maintain last dose. *Sajous.* 75

Adrenals, Diseases of. DIAGNOSIS. Adrenal insufficiency is suggested by: 1. Circulatory disturbances (small pulse, low tension, tachycardia, chilliness, white line). 2. Digestive disturbances (anorexia, vomiting, diarrhœa or constipation). 3. Nervous disturbances due to toxic irritation of plexuses around adrenals. 4. General disturbances (anæmia, emaciation, progressive amyotrophy). Diagnosis confirmed by benefit from organotherapy. *Boinet.* 27

Anæmia. **TREATMENT.** Seven cases of severe anæmia greatly benefited by transfusion of only 5 cubic centimeters (75 minims) of human blood. No benefit in cases of leukæmia. Transfusion of this amount generally harmless, though blood from certain persons showed some toxicity. *Weber.* 63

In anæmia due to auto-intoxication from gastro-intestinal tract, as often occurs in chlorosis: 1. Favor gastric functions by proper diet. 2. Secure regular bowel movements by laxatives. 3. Begin use of iron, giving following pill: Subcarbonate of iron, 0.10 gram ($1\frac{1}{2}$ grains); powdered aloes 0.02 gram ($\frac{1}{4}$ grain); extract of rhubarb, 0.05 gram ($\frac{3}{4}$ grain); two pills before meals. *Huchard and Fiessinger.* 298

Gastric hyperæsthesia in anæmia and chlorosis favorably influenced in several instances by aluminium silicate, given in the form of neutralon in doses of $\frac{1}{2}$ to 1 dram in 3 ounces of water, $\frac{1}{2}$ to 1 hour before meals. *Rosenheim and Ehrmann.* 352

Aneurism, Aortic. DIAGNOSIS. Early positive diagnosis only by the X-ray. Expansile pulsation not constant. Abnormal

dullness a valuable sign when present. Most constant sign is systolic bruit; present in 11 of 19 cases. Tracheal tugging in but 2 cases. Earliest and most constant symptoms were dyspnœa and cough. Interference with passage of bismuth capsule the size of a quarter through œsophagus found present in every case tested (by X-rays); especially valuable in small aneurisms growing back from transverse part of arch and shows œsophageal obstruction before dysphagia appears. *Lange.* 349

Angina Pectoris. DIAGNOSIS. Presence or absence of signs of organic disease at root of aorta should be ascertained. Signs of general arterial or aortic disease coexisting with history of precordial pain warrant diagnosis. A slight harsh clicking sound accompanying or following the sound of aortic closure, suggesting to the ear a roughening of the aortic cusps, is of value in the diagnosis. *Butler.* 22

TREATMENT. Erythrol tetranitrate has a less marked but more lasting effect than nitroglycerin. Especially indicated in those patients who are awakened at night by the pains. *Huchard and Fiessinger.* 172

Ankylosis. **TREATMENT.** Fibrolysin used with benefit in joints ankylosed as result of rheumatic affections. Single dose used was 2.3 cubic centimeters (37 minims) subcutaneously, sometimes more; largest total amount given was 117.3 cubic centimeters (4 ounces). Untoward effects: sometimes sensation of fatigue on day of injection, and occasionally slight local inflammatory reaction, which disappeared with moist dressings. Best results where ankylosis due to extra-articular connective tissue; less improvement in presence of pus and in gonorrhœal cases. Used in conjunction with hygienic and dietetic measures, warm sulphur baths, and later active and passive movements. *Knotz.* 124

Appendicitis. DIAGNOSIS. Following sign often useful in diagnosis between appendiceal and pelvic inflammation: Stretching skin of abdomen slightly to increase its translucency, veins internal to anterior superior spine, and running upward and slightly inward, will be found darker than elsewhere when appendix involved. *Skinner.* 350

Appendicitis, Acute. **TREATMENT.** Where patient carried through an attack without operation, give only liquid diet till appendix removed. In perforative or gangrenous cases suffering from beginning diffuse peritonitis, gastric lavage, slow instillation of normal saline by rectum and abstinence from ca-

thartics or food by mouth are indicated; 97 per cent. can later be safely operated. *A. J. Ochsner.* Page 360

Appendicitis in Pregnancy. TREATMENT. In severe cases operate without delay. Mild cases do not demand operation unless there are frequent attacks. When near the end of gestation or in labor, terminate pregnancy and remove appendix immediately after. *Findley.* 160

Arteriosclerosis. DIAGNOSIS. Careful ophthalmoscopic examination frequently reveals the earliest signs of arteriosclerosis. *Bruner.* 23

TREATMENT. In 2 cases of arteriosclerosis in diabetes, blood-pressure was lowered and arteries rendered softer by treatment with dried thymus, 30 to 120 grains three or four times daily. Author uses fresh thymus of calves, dried by himself. *Geyer.* 424

Arthritis Deformans. TREATMENT. Progress of disease often stopped by removal of causes of irritation, such as inflamed appendix, hæmorrhoids, etc. Where primary lesion obscure or no longer operative, best results obtained indirectly by relieving pain in affected joints. This is done by applying an absolutely rigid retention dressing, with the limb in such a position that the antagonistic muscles are in absolute equilibrium. If limbs cannot be brought into desired position without extreme pain, contractures are broken up under anæsthesia, and tendons lengthened, if necessary, by tendoplasty. Plaster-of-Paris dressing is applied, and allowed to remain until pain and irritation have subsided. A new plaster mold reinforced with basket splints and wheat gluten bandages is then substituted. *E. H. Ochsner.* 221

Ascites. TREATMENT. Autoserotherapy retards transudation into peritoneum and produces lasting polyuria. Under local anæsthesia withdraw a little fluid from peritoneal cavity with sterile hypodermic syringe, and at once reinject in subcutaneous cellular tissues. Repeat at six-day intervals, injecting progressively larger doses of ascitic fluid (3, 5, 8, and 10 cubic centimeters). Continue treatment for two months. *Audibert and Monges.* 160

Asphyxia. TREATMENT. Adrenalin, slowly administered intravenously; 10 drops of 1 : 1000 solution in 1 dram of saline solution. Artificial respiration. *Sajous.* 75

Asthma. TREATMENT. To arrest paroxysms, adrenalin (5 to 10 minims of 1 : 1000 solution in 1 dram of normal saline) may be slowly injected into a superficial vein or hypodermically. *Sajous.* 75

Thyroid and corpus luteum preparations found valuable in 7 out of 14 cases. Thyroid beneficial in 6 cases; corpus luteum in 1. Began with dose of only 0.025 gram (2% grain) of powdered thyroid, given in cachet once daily; later increased to 0.10 gram (1½ grains). Asthmatic paroxysms ceased or were greatly diminished. Also useful in

asthmatoïd dyspnœa of renal and gastric cases and in ordinary nasal asthma or hay asthma. *Léopold-Lévi and H. de Rothschild.* 413

Brain Tumor. TREATMENT. A decompression operation is indicated where grave symptoms of increased intracranial pressure exist, and especially should not be delayed when papilledema (choked disc) is developing rapidly. If the symptoms do not call for immediate decompression, antisyphilitic treatment may first be tried. *Spiller.* 223

Bronchitis, Chronic. TREATMENT. 1. Potassium iodide combined with syrup of hydriodic acid; may be alternated with terpin hydrate. Creosote is also valuable; combined with whiskey and glycerin it will rarely disagree with the patient. 2. Sedatives or anodynes to be avoided. The least objectionable are bromides, henbane, or codeine. Where dyspnœa or nervous irritability, Hoffmann's anodyne, with the iodide. 3. A mercurial followed by salts, once a week or oftener, reduces cough and expectoration for a time. 4. Persistent counter-irritation to the chest, using compound tincture of iodine; occasional intermissions when skin becomes tender. 5. Inhalations of a mixture of equal parts creosote, alcohol and spirit of chloroform, using perforated zinc inhaler. 6. Patient should not be housed. Change of climate where practicable; preferably to Georgia in winter, Adirondacks in summer. *B. Robinson.* 88

Carbuncle of Face. TREATMENT. Passive hyperæmia by means of band around lower part of neck used with success in carbuncles of face and on back of neck (when high enough). Use band of rubber tissue 3 centimeters broad. Mild constriction sufficient and band should be worn 20 to 22 hours daily unless œdema appears. Relieves pain; on third day purulent discharge sets in, lasting a few days. Avoid squeezing out pus. Intervention with knife unnecessary. *Keppler.* 292

Carcinoma. TREATMENT. Quinine, stirred with water to a paste, used locally in cases of epithelioma where operation refused. Application repeated four times on alternate days. Caustic action at first exerted on ulcers, which later healed completely under simple iodoform dressing. Also useful in palliative treatment of inoperable uterine cancer. The remedy is of diagnostic value, as on ordinary erosions it does not have the destructive effect produced on cancer. *Stroné.* 94

The use of high-frequency currents found valuable in treatment of malignant growths, denuded surfaces, slowly healing wounds, and tuberculosis. On epitheliomas they exert a selective cytolytic action. Infected glands disappear, and discharge becomes odorless. Current has an analgesic effect. Time of application should never exceed 10 minutes. For internal growths current is used after operation to promote cicatrization. *Rivière.* 124

Acetone used in palliative treatment of 15 cases of inoperable uterine cancer. Hardens the tissues and stops hæmorrhage, septic absorption, and odor. After curetting under ether, solution of acetone is poured into the cavity through a conical speculum, contact with normal vaginal tissues being avoided. Hips elevated. Excess drained off through speculum and subsequently by tampon. When discharge begins again treatment is repeated without ether. Pain was not relieved but marked relief obtained from general infection. *Tovey*. Page 122

Carcinoma of Sigmoid and Rectum. DIAGNOSIS. 1. Early suggestive symptoms. Soreness in lower bowel, borborygmus, cramps, diarrhœa, mucus, pus, or blood, difficulty in completely evacuating bowel, distention in lower abdomen, with history of having felt something move after change of position. 2. Later: Emaciation, weakness, and pain in sciatic regions and calves of legs. 3. Local examination and removal of section of diseased tissue for microscopic diagnosis.

TREATMENT. Where obstructive distention requiring prompt relief, establish artificial anus, temporary or permanent according to extent of morbid invasion. Where immediate relief not essential, operation depends upon position of growth and surrounding infiltration. Complete excision wherever possible, with anastomosis or artificial anus. Preliminary colostomy may be advisable to improve chances of recovery after excision. Where excision of a sigmoid growth not possible, anastomosis may be established in one of several ways; in case of rectal or anal growth, palliative treatment by drugs, with curettage and cauterization. Making of an artificial anus relieves pain, has low mortality as compared with excision, and often leads to distinct subsidence of growth. *Erdmann*. 169

Carcinoma of Stomach. DIAGNOSIS. Danger-signal: middle age, loss of weight and strength, with perhaps some dull epigastric pain. If, in spite of six or eight weeks' careful treatment, symptoms increase in severity, loss of weight becomes more out of proportion to dyspepsia, appetite leaves, and some anæmia appears, diagnosis of probable malignancy is justified and operation indicated. *Deaver*. 175

Malignant disease has been demonstrated by X-rays, through its invasion of stomach-cavity and resulting changes in peristaltic waves. *Leonard*. 178

Cataract. TREATMENT. Euphthalmin hydrochlorate in 3 or 5 per cent. solution used as mydriatic in cases of bilateral cataract where central opacity precedes cortical involvement and where iridectomy for any reason cannot be performed. Vision through the uninvolved cortical portion of the lens thus becomes possible. After using one or two drops in each eye, mydriasis begins in

20 minutes and lasts 4 to 7 hours. No untoward effects observed. *Dufour*. 165

Cellulitis with Gangrene. TREATMENT. Case of diffuse phlegmon of leg with gangrene treated successfully with: 1. Linear applications of thermocautery. 2. Subcutaneous injections of hydrogen peroxide 1 to 2 centimeters above infected area. 3. Passive hyperæmia induced thrice daily by rubber bandage above knee. 4. Daily bathing of part in warm permanganate solution. 5. Wet dressing of hydrogen peroxide. *Petit*. 173

Chilblains. TREATMENT. 1. Measures to allay co-existing irritative influences originating in various portions of body, as the nasopharynx, teeth, respiratory or digestive tracts, etc. 2. Gymnastic exercises of extremities at hourly intervals. Arms raised above head, with alternate flexion and extension of hands and fingers. Similar movements of lower limbs. 3. Protection from cold. 4. Kneading, after raw surface of chilblain has become covered. *Jacquet and Jourdanet*. 162

Cholecystitis. TREATMENT. Irrigation with normal saline solution, at the rate of about six drops per second and with elevation of one foot, of biliary fistulæ, after drainage of gall-bladder for cholecystitis, cholelithiasis or cholangitis: 1. Produces prompt diuresis. 2. Hastens disappearance of chronic jaundice. 3. Often relieves postoperative biliary vomiting. *McArthur*. 87

Curable by diet and hygiene or operation. Cholecystostomy usually adequate. Cholecystectomy when gall-bladder gangrenous or duct completely obstructed; should be performed several months after primary cholecystostomy. *B. Holmes*. 292

Cocaine Poisoning. TREATMENT. Administer ether by inhalation, only to the degree of mild surgical narcosis or even less. Employ a mask and give anæsthetic by drop method. Probably also valuable for poisoning by stovaine or other synthetics. *Engstad*. 414

Colitis, Chronic. TREATMENT. Rectal use of hot solution of gelatin beneficial in obstinate cases of catarrhal colitis with diarrhœa. First give enema of one pint of water at 25-28° C. (77-82° F.), and when this is evacuated, have patient rest half to three-quarter hour. Then introduce through nozzle four or five inches long 40 to 80 cubic centimeters (1¼ to 2½ fluidounces) of 10-per-cent. solution of gelatin in Carlsbad water (Sprudel) at 45-52° C. (113-125° F.). Patient lies on back for two hours with warm application over abdomen. Fluid usually retained. *Aldor*. 415

Collapse from Hæmorrhage. TREATMENT. Suprarenalin or adrenalin given very slowly by intravenous method. Use 5 minims of the 1:1000 solution to a pint of warm saline solution (105° F.). In urgent cases, 10 drops may be given in 1 dram of saline solution,

and repeated at intervals until heart responds. Artificial respiration hastens effects. *Sajous.*

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Collapse in Infections. TREATMENT. Obscure collapse in infections often due to adrenal insufficiency. As soon as asthenia and lowered blood-pressure appear, administer adrenalin solution (1:1000) or cachets of glandular extract. In children give 10 to 20 drops of 1:1000 solution daily, divided into 5 or 6 doses. *Moizard.*

Constipation. TREATMENT. Appendicostomy considered as indicated in: 1. Cases of severe atonic constipation where colon much dilated and sacculated. 2. Cases of obstructive constipation where obstruction cannot be directly dealt with, *e.g.*, where inseparable adhesions between viscera and abdominal wall. 3. Cases of congenital dilatation of the colon, as alternative to resection of bowel. Instances of favorable results from appendicostomy mentioned. *Mummery.*

Where hard feces accumulated in rectum, mucous membrane excoriated, and sigmoid tender, wash out rectum and colon with several quarts of hot water containing a few drams of sodium bicarbonate, borax or boric acid, introduced slowly with patient in knee-chest position, or with hips elevated. Then inject half tumblerful of oil in rectum and leave over night. *Tyrode.*

Coryza. TREATMENT. Sodium salicylate causes a cold to abort if taken within 24 to 36 hours. Single dose of $7\frac{1}{2}$ grains (0.5 gram) often suffices. Taken later, it relieves symptoms and shortens attack. It is also valuable in the chronic coryza of gouty subjects. Should be taken after eating, and preferably in small doses, dissolved in half a glassful of water. *Courtade.*

Cystitis, Acute. TREATMENT. Collargol beneficial when used locally in this condition or in pyelitis. *Albrecht.*

Cystitis, Chronic. TREATMENT. 1. Where urine acid, alkaline diuretics and mineral waters; where urine alkaline, urinary antiseptics, *e.g.*, capsule containing 5 grains each of urotropin and salol. 2. Local treatment: bladder irrigations. Empty bladder, introduce soft-rubber catheter and introduce warm solution of one grain each of silver nitrate and potassium permanganate in a pint of distilled water, until bladder comfortably distended. After evacuation, repeat the process. Then inject $\frac{1}{2}$ ounce of one of silver salts, to be retained. *Christian.*

Delirium Tremens. TREATMENT. Veronal used in 100 cases, and all but 3 benefited. Initial dose of 1 gram (15 grains) in incipient cases, repeated in 3 hours if sleep does not follow. Sleep then usually lasts 6 to 8 hours and on waking patient is quiet and feels well. If tremor is still present, 0.5 gram ($7\frac{1}{2}$ grains) veronal may be given. The same dose every evening prevents insomnia. Where delirium is not controlled by the first 2 grams, another gram may be given 5 to 6

hours after the second dose. One case of veronal rash noted. *Möller.*

Diabetes. TREATMENT. Phosphoric acid preparations valuable in diabetic cachexia. Phosphoric acid, 75 grains; acid sodium phosphate, 150 grains; distilled water, 10 ounces; one tablespoonful in water at every meal. Contraindicated where albuminuria. *Cautru.*

Calcium iodide used in 17 cases in doses of 5 to 15 grains three times daily, after treatment with codeine and diet had proved unsatisfactory. In all cases subjective symptoms were improved and amount of sugar in urine diminished. *H. E. Smith.*

X-rays projected over hepatic region cause decrease in glycosuria and rise in red blood corpuscles. In one case amount of sugar passed daily was reduced by 400 grams. Particularly effective in grave forms with emaciation and debility, less so in mild cases and those of obese type. *Ménétrier, Touraine and Mallet.*

Diarrhoea, Dyspeptic, of Infancy. TREATMENT. Calomel, one grain in broken doses, followed in 2 hours by castor oil, one dram. Daily irrigation of colon. If much vomiting, wash out stomach and colon, and follow by starch enema not exceeding 2 ounces. For two days give barley water, 2 fluidounces every 2 hours; for next two days, whey, 2 fluidounces every 2 hours. *Hollopeter.*

Digalen. This form of digitalis is not invariably free from cumulative effect, as has been claimed, but is better borne by the stomach than the galenic preparations. *Mayor.*

Drowning. TREATMENT. Adrenalin, 10 drops of 1:1000 solution in 1 dram of saline solution, slowly administered intravenously. Repeated at intervals until heart responds. Artificial respiration. *Sajous.*

Duodenal Ulcer. DIAGNOSIS. In cases of epigastric pain coming on some time after meals, presence of Cammidge's C reaction shows probable existence of a duodenal ulcer rather than a functional hyperchlorhydria in stomach. Five cases in which reaction was positive and duodenal ulcer found at operation. *Herschell.*

Dysentery, Amœbic. TREATMENT. 1. Rest important, even using opium if required. 2. Calomel at first where patient strong, then magnesium sulphate, 1 dram every 3 hours, as long as scybala being passed. Purgatives bad, however, where initial symptoms very acute, and in late stages. 3. Ipecac, in capsules of animal membrane or salol-coated pills; 30 grains in one dose on first day, reduce by 5 grains on each succeeding day until sixth, then give 5 grains nightly for a week or 10 days longer. Patient should fast 4 hours before taking the remedy, and remain quiet afterward. 4. Colonic irrigations hardly give better results than ipecac. Best is quinine 1:5000, increased to 1:1000; next to

quinine is silver nitrate. Have fluid retained 15 to 20 minutes. 5. Appendicostomy where refractory to rectal irrigations. Marked success in 2 cases, using quinine or saline solution through fistula. Perform operation in two stages: first bring base of appendix against abdominal wall, stitching meso-appendix to peritoneum; 48 hours later, apply cocaine to appendix, snip off with scissors and introduce No. 10 rubber catheter. *Anders and Rodman.* Page 290

Dyspepsia of Old Age. DIAGNOSIS. Of every 100 cases in persons over 65 years of age, 66 are secondary to organic disease of some important organ (kidneys, prostate, heart, lungs, liver, pancreas, chronic gout, etc.); 34 are due to degeneration of gastric and intestinal secretory structures. *Fenwick.* 24

Eclampsia. TREATMENT. Bilateral renal decapsulation employed in three dangerous cases with excellent results, after other measures had failed to bring on diuresis. *Lichtenstein.* 294

Eczema. TREATMENT. X-rays of value in subacute and chronic forms. In vesicular variety, mild applications suffice; in squamous and pustular eczema, more vigorous treatment required. Eczema of lips, ears, axillæ and anal region especially adapted for X-rays; itching relieved. Seborrhæic eczema of face also benefited. *Müller.* 239

Emissions, Nocturnal. TREATMENT. Styp-tol (cotarnine phthalate) found to prolong interval between emissions to from one to three weeks in all cases. Two, then three, styp-tol tablets of $\frac{3}{4}$ gram each administered before retiring, for a month. Fluidextract of hydrastis, 40 to 60 drops before retiring, also recommended. *J. Koenig.* 127

Epilepsy. TREATMENT. Diet low in proteids caused reduction in number of seizures by 14 per cent. Each of the three daily meals given consisted of 125 grams of bread, 16 grams of butter, and 250 cubic centimeters of milk. *Rosanoff.* 89

Exploratory trephining advised in traumatic epilepsy. Eleven cases operated, four of idiopathic and seven of surgical epilepsy. Cysts found in two instances, cicatrices in four, and oedema of pia in all. Improvement resulted in all the cases from removal of oedematous fluid. Epileptic attacks returned in four cases. *Tilmann.* 127

Epithelioma. TREATMENT. Commercial 40 per cent. formaldehyde solution applied in two cases with successful results. After three applications dead neoplastic tissues separated, leaving granulating surface, which later healed completely. Pain obviated by injections of 1 per cent. novocaine solution. No recurrence in ten months. Method suitable for comparatively small lesions without lymphatic involvement, where patient refuses operation. *Hallopeau and Fumouze.* 294

Extra-Uterine Pregnancy. TREATMENT. In first half of an ectopic pregnancy operation for removal of gestation sac is indicated

wherever conditions permit. In latter half, however, patient, under favorable surroundings, should be allowed to go within two or three weeks of term before operation, meanwhile being kept under watch. Removal of placenta at operation is of cardinal importance; if this be impossible, placenta should be shut off from peritoneum by gauze. Dependent drainage through vagina should be secured. *Peterson.* 225

Felon. TREATMENT. Operation advised as soon as diagnosis made. Patient should eat a substantial meal before the operation, and remain in recumbent posture until half an hour after operation is over. After applying tincture of iodine, inject sterile 1 per cent. cocaine solution in a circle at root of finger; as much as 3 or 4 grams (45 minims or 1 dram) of solution may be used. If felon very small, inject instead around lesion itself, 1 centimeter from its margin. Five minutes later incise, irrigate with hydrogen peroxide and establish drainage. Rest of treatment includes bathing of part in warm peroxide (1 in 4) and sterile compresses of same. *Appelmann.* 167

Femur, Fracture of. TREATMENT. Combination of Buck's weight and pulley system with suspension by the Hodgen splint gave very satisfactory results. Traction can be accurately measured and maintained, transverse displacement corrected, and comfort greatly increased. After extension is applied, the supporting bands attached to splint are passed under limb, which is then swung clear of bed. Supporting bands are adjusted to make support uniform, and later, if desired, to exert coaptative pressure anteroposteriorly or laterally on the fragments. *Stimson.* 226

Fibroids, Submucous. DIAGNOSIS. Gradually increasing dysmenorrhœa and menorrhagia, with consequent anæmia and "nervous debility," are typical symptoms which, in a woman of thirty years or over, should lead one to suspect this condition. In differential diagnosis, enlarged uterus from subinvolution, metritis, endometritis, and pregnancy should be considered.

TREATMENT. When submucous fibroid large and sessile: hysterectomy. Vaginal operation limited to removal of polypi, owing to importance of exploration of pelvis and abdomen where tumor of some size. Transperitoneal enucleation slightly increases operative risk, but if desired by patient in order to preserve uterus, may be performed. *Truesdale.* 225

Fibrolysin. Best given by intramuscular injection in dose of 35 minims (2.3 cubic centimeters), every other day. Desired solvent effect on local connective tissues is kept up by massage of the part. Connective tissue surrounding old infectious foci may also be affected and dormant bacilli set free; hence it is well to search for and exclude previous inflammatory disturbances in every case before using this remedy. *Stocker.* 167

Fistula, Anal. TREATMENT. Posterior commissure is weakest part of anal circumference. In ulcerations or small fistulas of this commissure, author makes a triangular incision with apex towards anus. In fissures, an incision $\frac{1}{8}$ inch deep is made into sphincter muscle on each side of fissure, which thus remains undisturbed at defæcation and heals more rapidly. *Brick.* Page 168

Furunculosis. TREATMENT. In furunculosis, carbuncles, acne and subcutaneous abscesses brilliant results from vaccine therapy can be expected. In chronic cases, best results when a fresh vaccine is prepared from the pus every two to four weeks. Cautiously increase dose at successive inoculations. *Thomas.* 161

Gallstones. DIAGNOSIS. Too often delayed. In most cases condition begins before fortieth year. Almost every patient will give history of long-standing dyspepsia, capricious appetite, constipation, flatulence largely independent of meals, and discomfort when stomach is empty. Later, acute attacks of pain in right upper abdomen may appear, and finally true biliary colic, with vomiting. Sensation of chilliness is characteristic. Jaundice, hæmatemesis, etc., as well as laboratory methods, are practically valueless for purposes of early diagnosis from gastric and duodenal ulcer. *Deaver.* 175

Gangrene, Diabetic. TREATMENT. Currents of air heated to 150°, 300°, 500° C., or even higher, applied repeatedly, found to prevent extension of gangrene and arrest toxic absorption by producing carbonization of the part. Amputation can then be performed with greater safety. *Diculafoy.* 223

Gastro-enteritis of Bottle-fed Infants. PROPHYLAXIS. 1. Certified milk or clean milk fresh from cow; if neither available, Pasteurization. 2. Fresh air. 3. Avoid overheated rooms. In hot weather child should be placed out-of-doors at night on properly screened porch. 4. Avoid overfeeding by giving boiled water to drink. 5. Light clothing and frequent cool bathing. 6. Destroy flies.

TREATMENT. 1. Withhold food for three days; then give barley-water. 2. Have child rest quietly in bed out-of-doors. 3. Wash stomach with boiled water at 100° to 110° F., with a little lime-water added. Before withdrawing tube introduce 2 drams of castor-oil and give thorough colonic irrigation. In cases seen later stomach washing not indicated unless gastric irritability present. After stomach settled give cool boiled water freely by mouth. 4. Colonic irrigations every 4 hours on first day, and later twice daily. Nutrient enemata every 4 hours, following irrigations. Be cautious with cathartics. 5. Tub-bath, lasting 10 to 20 minutes, to control temperature and restlessness. 6. Drugs: Bismuth subnitrate, 1 to 2 drams daily, in a child of one year. Salol, 1 to 2 grains every 3 hours. Opium where pain and continued

frequent stools. Brandy in boiled water where prostration; $\frac{1}{2}$ ounce in 24 hours. *Hulse.* 295

Glycosuria. TREATMENT. Glycosuria in elderly persons often results from only a certain few carbohydrates used in excess, especially cane-sugar and wheat-starch. Management consists in ascertaining the harmful ones and removing them from diet. Cut off all carbohydrates for a week, and if glycosuria disappears try oatmeal, at first with water containing saccharin or with butter, later with rich cream. Then try potatoes, peas, beans, etc., one by one, examining urine frequently. Open-air treatment of great value. *Vaughan.* 296

Goiter, Exophthalmic. ETIOLOGY. Acute rheumatism occupies an important place among infections which lead to development of Graves's disease. *Souques.* 165

TREATMENT. Previous to operative intervention: 1. Rest cure interrupted by systematic exercises. 2. Sojourn at some resort having elevation of 1000 to 1500 meters (3300 to 4900 feet). 3. Diet poor in albumin and fats. 4. Cool baths and lotions. 5. Internally, phosphorus, arsenic, and iron. Avoid measures producing rise in blood-pressure, as well as active diuretics. *A. Kocher.* 417

Case under observation for one year showed continued improvement under treatment with dried powdered thymus, 30 to 120 grains three or four times daily. *Gwyer.* 424

Gonorrhœa. TREATMENT. Vaccine therapy caused marked improvement or cure in subacute and chronic cases. Functional results good. *Thomas.* 161

Hæmophilia. TREATMENT. General: Tonics and a liberal diet. Calcium lactate beneficial for a short time, after which coagulation time again lengthens; if the drug be then left off a few days, its effect will again be exerted when resumed. For local hæmorrhages: Sterilized gelatin or adrenalin compresses, or simple pressure; sterilized gelatin solutions injected subcutaneously also effective. For hæmophilic joints: Pressure and absolute rest. Massage over parts slightly distant from joint to be cautiously begun a few days after development of effusion. If hæmorrhage produces great tension in joint, paracentesis of joint followed by injection of adrenalin solution should be the extent of operative interference. Pregnancy in hæmophilic women: Any indication of hæmorrhage warrants induction of labor. If this refused, give general tonic treatment and calcium lactate a day or so before expected confinement. *Larned.* 228

Hæmorrhage. TREATMENT. Adrenal preparations valuable in capillary hæmorrhage from pharyngeal, œsophageal, gastric or intestinal mucous membranes. Mastication of tablets of adrenal substance, or ingestion of 5-grain capsules of same, causes vaso-constriction. *Sajous.* 75

. Artificial gelatin made by combining gum arabic with perchloride of iron, then sterilizing the whole, very efficient when injected hypodermically, increasing coagulability of blood more actively than calcium chloride. *Ciuffini*. Page 292

Hæmorrhage in Bladder Operations. PROPHYLAXIS. About fifteen minutes before operation tie off all four extremities close to the axillæ and inguinal regions with gauze bandages. When skin of extremities begins to turn blue start operation, which will be remarkably dry. Useful for prostatectomy or removal of bladder tumor. No untoward effects. Less anæsthetic is required in operation, and healing of wound seems to be accelerated. *Kolischer and Kraus*. 418

Hæmorrhoids. TREATMENT. In 3 cases of bleeding hæmorrhoids treatment by thymus, 30 to 120 grains of fresh dried gland, three or four times daily, caused great diminution or cessation of the hæmorrhages, and improved state of blood. *Gwyer*. 424

Hammer Toe. TREATMENT, OPERATIVE. Apply Esmarch bandage. Incision $1\frac{1}{4}$ inches long at outer aspect of plantar surface of toe, with center at flexed joint. Dissect skin flaps laterally and continue incision through subcutaneous structures, avoiding artery and nerve. Dissect flexor sheath free from joint, hold it aside, and remove articulating joint surfaces with chisel. Allow subcutaneous structures to fall back in place, hold them by a few fine buried catgut sutures, close skin incision, and dress. Apply plaster-of-Paris bandage fixing toes in hyperextension, making flexor tendons tense, and holding bony surfaces in apposition. After ten days split plaster bandage, and expose field of operation. Then restore dressings and keep in original position for six weeks. *Soule*. 352

Heart, Dilatation of. TREATMENT. In asthenic cardiac disorders with dilated right ventricle, dyspnœa and possibly cyanosis and œdema, the adrenal principle improves oxidation and metabolism in the cardiovascular muscles and tissues at large. Tablets of $\frac{1}{2}$ to 2 grains of desiccated gland after meals. *Sajous*. 75

Heart, Neuroses of. TREATMENT. In cardiac irritability: 1. Caffeine citrate and tincture of strophanthus, both best given in tablet-triturate, are promptly effective. Caffeine relieves headache and vertigo when present. Cactus useful in some cases; acts more slowly. 2. Local applications, as cologne, spirits of camphor, ammonia. 3. Light and easily assimilable diet. Avoid meats. 4. Quiet and rest for weeks at a time. 5. Nerve tonic: combined glycerophosphates of lime and soda, gr. v-x *t.i.d.* after meals. 6. Where gastric or intestinal intolerance: milk of bismuth or lactobacilline tablets. 7. To promote sleep: gentle massage of lower limbs before retiring. If

hypnotic required, bromural, gr. v-x. *Beverley Robinson*. 163

Hepatic Cirrhosis. TREATMENT OF HÆMORRHAGE IN DIGESTIVE TRACT. Prophylactic: 1. Diet of milk, given only in small amounts, frequently repeated. 2. Avoid all exertions or nervous impressions which might raise tension in portal system. 3. Systematic saline purgation. 4. Leeching, at times, to reduce blood-pressure.—Curative: Hæmostatic remedies together with vasoconstrictors or coagulants according to indications. Ergotin, calcium chloride, gelatin injections, and especially injections of fresh antidiatheritic or other antitoxic serum. *Rauzier*. 363

Hernia. TREATMENT. A truss never cures a hernia in adult life, and rarely during childhood. Losses from disability due to hernia avoided only by early radical operation. *A. C. Wood*. 20

High Enemata. Only where the sigmoid is abnormally developed can a soft rubber tube be introduced higher than six or seven inches in rectum. Short tube six inches long best for all sorts of enemata when using water for fæcal evacuation. It is possible to cleanse entire colon by using a short tube of $\frac{1}{2}$ inch caliber. *Soper*. 61

Hyperchlorhydria. DIAGNOSIS. Excess of free HCl alone does not warrant a diagnosis of primary hyperchlorhydria, which shows variable symptoms, both gastro-intestinal and nervous. Though 31.6 per cent. had lost weight, the appetite was generally good and examination of the gastric contents and fæces showed that digestive power was but little impaired. The nervous manifestations included periods of depression and mental confusion, irritability, various phobias, numbness, paræsthesias, and attacks of faintness. Male sex and constant mental strain seemed to be predisposing factors. *G. M. Piersol*. 65

TREATMENT. Aluminium silicate in the form of neutral food effective in all cases of gastric hyperacidity or hypersecretion, whether of neurotic or organic origin,—especially where persistent hypersecretion with motor insufficiency. It reduced acidity, relieved pain and aided digestion. Acts as a protective and astringent to mucosa. Dose, $\frac{1}{2}$ to 1 dram in 3 ounces of water, $\frac{1}{2}$ to 1 hour before meals. *Rosenheim and Ehrmann*. 352

Heus, Paralytic. TREATMENT. Atropine found valuable in 8 cases. Inject 1 milligram ($\frac{1}{44}$ grain) hypodermically and follow shortly after by a stronger dose of 3 to 5 milligrams ($\frac{1}{22}$ to $\frac{1}{12}$ grain). Improvement and abundant fæcal discharge within ten hours. *Lederer*. 229

Incontinence of Urine. TREATMENT. In persistent or increasing incontinence following labor operation is usually necessary. In the average case the Frank operation, combined with anterior and posterior colporrhaphy and an appropriate operation for retroversion

when required, will bring about a cure. In marked dilatation of the urethra of long standing or where the muscular wall of the neck of the bladder and urethra have atrophied, Gersuny's operation offers best hope of cure. *Miller*. Page 90

Infant Feeding. Salts of cow's milk sometimes cause tendency to convulsions; treat by temporary salt-free diet. Sugar intoxication or intolerance of fats may likewise exist; treat by elimination of these from diet. *Neff*. 24

Intestinal Protein Indigestion. TREATMENT, DIETETIC. Cut proteids to a minimum, give chiefly cereals and other starches, and supply assimilable fats guardedly. A little lean meat or milk, or vegetables rich in protein may, however, be allowed to avoid loss of weight. Gelatin, junket, whey, and buttermilk often valuable. Fermented milks especially useful when stomach also deranged and in gout and arteriosclerosis. Where hyperacidity and spasmodic pain prominent, give hot olive-oil. Forbid tea, coffee, and alcohol, and encourage drinking of distilled water. **MEDICINAL.** 1. Cleanse bowel at once with calomel or calomel and podophyllin, followed by a saline. To keep bowel clean, use phenolphthalein in tablet form or as syrup; one or two tablets every night sufficient, and later to be reduced in frequency. Foods like shredded wheat, also systematic deep breathing, will assist drugs. 2. Bile-salts, as cholagogue and to relieve such symptoms as offensive breath, coated tongue, etc. 3. Ferments, kept up several months. Alkalies where fat not well digested. 4. Intestinal antiseptics, as salol, naphthalene tetrachloride, some guaiacols, creosote, sulphocarbolates, or agar soaked in hydrogen peroxide and flavored. 5. Where hyperchlorhydria, give eumydrin ($\frac{1}{165}$ grain or 0.001 gram *t. i. d.*), combined with sodium citrate. Where deficient gastric secretion, try suprarenal extract, or the old and well-known measures. 6. Tonics, especially at outset, avoiding strychnine. *Thayer and Turck*. 418

Intussusception. TREATMENT. Lateral anastomosis performed in 2 acute cases and advocated in preference to resection because of its comparative simplicity and safety. Tumor was found to disappear subsequent to operation. Not applicable, however, to gangrenous cases. *Parry*. 125

Iodine. As skin disinfectant. Some hours before operation field is shaved dry and painted with 10 or 12 per cent. tincture of iodine. Dry sterile dressing. Painting repeated on operating table. Author shaves and thoroughly cleanses skin 12 hours before iodine applied. Primary union in every case. *Jewett*. 63

Larynx, Fracture of. TREATMENT. Cases divided into three groups according to indications for tracheotomy: 1. Mild cases; fracture often incomplete and detected only on careful palpation. Keep patient under close watch. 2. Serious cases; marked dysp-

nea, sometimes hæmoptysis. Immediate tracheotomy indicated. 3. Cases of intermediate severity. Preventive tracheotomy should be practised whenever patient cannot be kept constantly under watch. *Michel*. 351

Leprosy. TREATMENT. Oil of chaulmoogra is best given as a saponified preparation, in keratin-coated pills; the purified oil can also be injected in doses of 1 gram three times a week. Nastin injected in doses of 1 cubic centimeter gave good results. Great persistence in treatment, even after relief of symptoms, found advisable. Local treatment by resorcin, hydrogen peroxide, ichthyol, thiosinamine, etc., and baths, also useful. *Kupffer*. 169

Lupus Erythematosus. TREATMENT. Constitutional: regulation of diet to avoid overloading intestine; coffee or tea contra-indicated; quinine often useful. Local: in hyperæmic stage, cooling lotions and ointment of subacetate of lead, ichthyol lotion or ointment; in chronic cases, strong solution of ichthyol or iodine liniment; in severe conditions, linear scarification or light touches of thermocautery. High-frequency currents in subacute cases, Finsen light, X-rays or radium in chronic cases: particularly useful where thickening of the integument. *Morris*. 63

Meningitis. TREATMENT. Early relief from excessive intracranial pressure by means of lumbar puncture advocated in treatment of uncomplicated cases of all forms of meningitis, including tuberculous. Earliest possible recognition of pressure symptoms required, for which purpose total and differential leucocyte counts are of value. Four cases of meningitis reported (including one tuberculous), which recovered after lumbar puncture. *Hultgen*. 298

Meningitis, Cerebrospinal. TREATMENT. Lumbar puncture as soon as distinct meningeal symptoms noted, draining away spinal fluid,—the more, the better. Next inject Flexner antimeningococcus serum in spinal canal; quantity of serum should equal but never exceed quantity of fluid drained away. If lumbar puncture yields dry tap, and meningeal symptoms continue, aspirate lateral ventricles, if in an infant, through anterior fontanelle, and if in an older child, by the Kocher method: Shave small patch of scalp and make one-inch linear incision 3.5 centimeters from sagittal line and 5 centimeters anterior to sulcus centralis. Expose bone and perforate it with Doyen perforator followed by a burr, leaving cup-shaped fossa and exposing dura. Gently insert hollow exploratory needle, with blunt point and side-openings, perpendicularly into second frontal convolution; at a depth of 4 to 5 centimeters ventricle is readily found, particularly if distended. If pus present, drain ventricle and then wash with normal saline until fluid returns clear. Inject 20 to 25 cubic centimeters of serum. Repeat this procedure

daily until tapping of ventricles is negative. If symptoms of intracranial pressure, as vomiting or convulsions, appear immediately after injection, however, repeat procedure only once in 48 or 72 hours.

Case of an infant two months old reported, in which intraventricular method of treatment led to complete recovery. Infant was fed at the breast, bowel function insured by enemas or an occasional dose of castor oil, and diuresis promoted by giving water.

Fischer. Page 120

Metrorrhagia. TREATMENT. Excessive menstrual discharge in young girls, due to blood changes, often arrested by following: Subcarbonate of iron, 0.10 gram ($1\frac{1}{2}$ grains); ergot (Bonjean), 0.05 gram ($\frac{1}{4}$ grain); quinine hydrobromide, 0.01 gram ($\frac{1}{6}$ grain); extract of belladonna, 0.005 gram ($\frac{1}{2}$ grain); two pills before meals. *Huchard and Fiesinger.* 298

Myasthenia Gastrica. TREATMENT. 1. Remove causative factors, as excesses or nerve-strain, if these are evident. 2. Exercise, either out-of-doors, or as special movements to strengthen abdominal muscles. Follow morning exercises with cold shower bath or plunge. 3. Rest in bed for a week, where muscular relaxation marked. If this not possible, use some form of abdominal support, as by Rose's belt of adhesive plaster, to be worn two weeks. 4. Gastric lavage with cool saline solution, not exceeding eight ounces. 5. Mixed diet, consisting of carbohydrates in the form of cereals, toast, rolls and crackers, and vegetables; proteids, as meats, eggs and milk; fats, as butter. Cooked fruits and a little ripe raw fruit allowable. Interdict sweets, and limit fluid intake to 6 ounces with each meal. Avoid overloading stomach at any given time; allowing three light supplementary meals daily, if necessary to secure this end. Patient should lie down for one hour after meals. In severe cases, rectal feeding for a few days. 6. Drugs. The best are strychnine phosphate, gr. $\frac{1}{60}$; extract of ergot, gr. j, extract of coca, gr. ij, extract of physostigma, gr. $\frac{1}{6}$, and hydrastin hydrochlorate, gr. $\frac{1}{4}$, taken fifteen minutes before meals. *Chace.* 356

Nævus. TREATMENT. Small, red, arterial nævi respond well to radium. Large, superficial, purple, capillary nævi indicate use of mercury quartz lamp. Mixed nævi of moderate size should be treated by both methods. Give not more than two or three exposures with radium, nor more than four or five with lamp. Time of application not to exceed one hour. Results better than with X-rays. *Kromayer.* 420

Nausea, Postanæsthetic. TREATMENT. Olive oil given by mouth in thirty cases of ether anæsthesia, after partial restoration of consciousness. In only one patient was nausea observed after its use. Where nausea had already begun it was at once checked by administration of the oil. *Graham.* 91

Nephritis, Acute. SURGICAL TREATMENT.

Case of severe acute nephritis in a man 25 years of age, with no urine passed for 5 days, saved by decapsulation of both kidneys (Edebohl's operation). A few hours after operation both kidneys resumed function. *Karo.* 43

Nephritis in Childhood. TREATMENT. 1.

Diet. For two days prohibit all food, giving only 500 or 600 grams (1 pint or 20 ounces) of water, sweetened with table- or milk-sugar, daily. Then give 500 grams of milk and same amount of water. When condition becomes subacute, add carbohydrates, as preparations of flour, potatoes, etc. Add sugar to milk; when distasteful, dilute milk with Vichy, or give it alternately raw and boiled. Where milk diet not tolerated or results poor, try salt-free diet, omitting proteids and limiting milk to small amounts. Later, if no complications, lean ham, fresh pork, lamb and chicken may be given. Milk should not be taken with meals. 2. Rest in bed and avoidance of exposure. 3. Stimulate skin by general rubbings, gentle massage and tepid baths. Hot pack. 4. Dry cupping, wet cupping, or leeching over triangle of Petit. 5. Systematic disinfection of mouth, nasal fossæ and pharynx, and treatment of skin lesions as possible portals of infection. Where excretory insufficiency appears: 6. Hot air or vapor baths. 7. Drastic purgative, followed by laxative. When signs of intoxication appear: 8. Theobromine, 0.5 gram, at most 0.75 gram ($7\frac{1}{2}$ or $11\frac{1}{2}$ grains) at a dose in child of 10 to 13 years. Powdered squill, digitalis and scammony, 0.025 gram ($\frac{1}{2}$ grain) of each in a pill, given 2 or 3 times daily. If circulation weakens, digitalin or infusion of digitalis. Convallaria or convallamarin. Sparteine in the dose of 0.04 or 0.05 gram ($\frac{3}{4}$ or $\frac{1}{2}$ grain) in the 24 hours. *Hutinel.* 357

Nephritis, Chronic Interstitial. TREATMENT.

1. Diet. Fairly full diet combined with free elimination usually gives best results. A little meat with short fiber (as mutton, chicken) may be allowed at noon, and in morning or evening some fish; vegetable food, preferably farinaceous; milk freely; stimulants prohibited. Urine and general condition of patient should be watched in relation to diet. 2. Hygiene. Freedom from anxiety and overwork; moderate exercise; warm, dry and equable climate. 3. Physical measures. Free sudation by hot-air baths, vapor baths, or hydrotherapy, carefully avoiding renal congestion. 4. Drug therapy. Sodium iodide, gr. xv-xxx; sodium phosphate, gr. xxx-xxlv; sodium chloride, gr. xc; water, Oij; to be taken freely as a drink. Purgatives. Where marked anæmia: Basham's mixture or triple arsenates with nuclein. In failing compensation: digitalin combined with a vasodilator, as one of the nitrites (at first in small doses). Veratrine (0.5 milligrams or gr. $\frac{1}{134}$ every half hour

until pulse relaxed) is a safe and effective vasodilator for continued use. In bad cases opium in small doses (2 to 4 minims of deodorized tincture) strengthens heart and dilates arterioles. When complications occur, stimulants, diuretics, purgatives and diaphoretics may be indicated. In dyspnoea, quebrachine hydrochlorate or aspidospermine valuable. *Butler*. Page 171

Neuralgia. TREATMENT. One to two grains of 1 : 1000 adrenalin ointment applied to skin over affected area in neuralgia and neuritis produces ischaemia of the hyperaemic nerves and thus arrests pain. *Sajous*. 76

Neuritis, Multiple. TREATMENT. Subcutaneous injections of arsenic caused marked improvement or cure in 5 cases. Formula used: Sodium cacodylate, 1.5 grams (23 grains); cocaine hydrochloride, 0.1 gram (1½ grains); liquid phenol, 3 drops; distilled water *ad* 50 grams (1½ ounces). Began with 0.4 cubic centimeter (7 minims), dose injected being increased by 0.1 cubic centimeter (1½ minims) daily until 2.0 cubic centimeters (32 minims) reached; this amount continued for two weeks, then reduced gradually to 0.4 cubic centimeter. *Willige*. 421

Noma. ETIOLOGY. Ulcerative stomatitis offers a good soil for development of noma. A streptothrix is regularly present in noma, showing thick mycelium at edge of lesion with fine rods and spirilla extending into adjacent tissues. This organism is probably direct cause of noma. It is present already in the pregangrenous stage.

TREATMENT. Radical treatment is to be practised in pregangrenous stage; thorough use of actual cautery over ulcer and adjoining tissue. When ulcer spreads, best results are obtained by conservative measures: applications of hydrogen peroxide, pure alcohol, and potassium chlorate. General anaesthesia contraindicated because of danger of pulmonary infection; cauterization or removal of specimens can be done painlessly. *Neuhof*. 421

Obesity. TREATMENT. Strict vegetable diet for 4 to 6 weeks, then 150 to 200 grams of lean boiled meat 3 times a week or once daily. This diet kept up for months, and tends to protect from returning corpulence. If weight begins to increase, drop meat again for 4 to 6 weeks. Such diet best corrects obese tendencies without impairing general health. Supplement by exercises and hydrotherapeutic measures. *Albu*. 25

Osteomalacia. TREATMENT. In a case of non-puerperal osteomalacia, after two years in bed and failure of all other measures, suprarenal extract given according to Bossi's technique. From 8 to 10 injections of 1 cubic centimeter made each month. By the thirtieth injection great improvement was manifest, and in time the entire syndrome arrested, with almost complete restoration of function. *Bernard*, 92

Otitis Media, Chronic. TREATMENT. Perhydrol in 2 to 6 per cent. solution found useful. Patient drops solution into ear and remains on side for 10 minutes; auricle is then dried and cotton inserted in meatus. Where much suppuration, repeat morning and evening. Inspissated pus is dislodged, and cholesteatoma also yields. *Bresgen*. 125

In late stages:—If tube diseased: inflation, with bougie if stenosis exists. Intratympanic injections of menthol oil, iodine solutions, pilocarpine, menthol giving best results. Where fixation of the ossicles: pneumo-massage; injection of fibrolysin sometimes valuable. Operative measures: mobilization of the malleus, synchotomy and tenotomy of the tensor tympani, eventual excision of the malleus and incus. *Yearsley*. 61

Case of subacute otitis media, complicated by suppuration of ethmoid sinus, in which hexamethylenamin (5 grains t. i. d.) caused rapid and marked improvement. *E. J. Brown*. 353

Antiseptic vapors of kelvulin, a dark, oily liquid, used in treatment of septic conditions of tympanum, attic and mastoid antrum and cells; it is forced into these cavities by means of a special volatilizing inflator inserted into the external meatus or adapted to a Eustachian catheter. Anaesthetic property of the vapor precludes pain from heat liberated. Meatus and tympanic cavity to be carefully cleansed and dried before introducing the vapor. Treatment usually given every third day. Causes rapid diminution of discharge, improvement in hearing and in general condition. *Stuart-Low*. 362

Patella, Fracture of. TREATMENT. In all compound fractures, prompt operative intervention is demanded. In subcutaneous fractures, operation may be deferred from 3 to 5 days. In the interval flexion is prevented by a posterior plaster-of-Paris splint, and absorption of fluid hastened by compression with gauze or elastic bandages. In operating, prepatellar fibroperiosteal tissues must be sutured, and all tears in soft tissues surrounding patella carefully repaired. To assist in maintaining apposition of bony fragments, patella is circumferentially looped by a ligature passed close to its periphery and imbedded in the quadriceps tendon and ligamentum patellae midway between their anterior and posterior surfaces. Where separation slight and prepatellar tissues practically untornd, procedure may be limited to looping fragments and fortifying prepatellar tissues by V-shaped kangaroo tendon sutures, without entering joint-cavity. Otherwise, all fluid and clots in joint and subquadricepial *cul-de-sac* may be removed by gauze swabs mounted on artery forceps; irrigation inadvisable. While patient still under anaesthesia, apply moulded and padded plaster-of-Paris splint covering posterior and lateral surfaces of limb, with leg in full extension and thigh slightly flexed. This splint is to be used for about a month. First motions

of patella should be lateral. Begin cautious flexion of knee one month after operation. *Heineck.* Page 114

Pelvic Inflammation. TREATMENT. Abscess. Simple vaginal incision with drainage; if condition becomes worse, abdominal section, by extraperitoneal method if possible, should be attempted. *Esch.* 62

Hot mud compresses over abdomen recommended in chronic exudative adnexal inflammations and pelvic exudates. The heat is much better borne than in hot-water applications, and 10° C. greater heat can be applied. If surface be covered with woolen cloths, heat retained for several hours. Causes hyperæmia and promotes removal of exudate. Contraindicated in acute cases. *Cukor.* 63

Pemphigus. TREATMENT. Quinine in large doses used in two severe cases with pronounced benefit. One patient was given 23 grains daily for two weeks, then 31 grains daily. No tinnitus, vertigo or vomiting resulted. *Bergrath.* •230

Pericarditis. ETIOLOGY. Myocardial degeneration, leading to dilatation, predisposes to pericarditis. Overaction of heart may induce pericardial inflammation. Chronic adhesive pericarditis frequent but often impossible of diagnosis, serious symptoms arising only when myocardium itself is diseased. *Brooks and Lippencott.* 26

Peritonitis. PROGNOSIS. Degree of improvement in circulation caused by intravenous saline infusion is an index of the extent of vasomotor paralysis, the effect persisting in proportion to recuperative power of vessels. If infusion causes no circulatory improvement little benefit can be anticipated from operation. *Lichtenberg.* 126

TREATMENT. Restrict the amount of tamponing and never insert a tampon between loops of intestine. Fowler position always exerts favorable influence. *Dege.* 64

Measures recommended for inhibition of peritonitis: 1. Gastric lavage immediately, where nausea, vomiting or gaseous distention (except where peritonitis follows perforation of stomach or duodenum). 2. Rectal instillation of normal saline by drop method, continuing for 1 to 2 hours, then interrupting for 2 hours. Where this method not practicable, give 500 to 1000 cubic centimeters of saline solution subcutaneously, repeating as required to relieve thirst and keep vessels filled. 3. Fowler position. 4. Large, hot, moist dressing of saturated boric acid solution and alcohol in equal parts applied to abdomen. 5. Give no cathartics or food by mouth; even prohibit water till patient on way to recovery. Feed by enemata consisting of 1 ounce of concentrated liquid food in 3 ounces of normal saline; add 10 to 50 drops of deodorized tincture of opium to each feeding till no longer painful. Administer slowly every 3 or 4 hours through rubber catheter

introduced not more than 3 inches. *A. J. Ochsner.* Page 360

Peritonitis, Tuberculous. TREATMENT. Air injected in peritoneal cavity after paracentesis in three cases of the exudative type, with recovery. After removal of exudate by trocar, air is forced in by emptying water from a large syringe into the aspirator jar. *Florio.* 238

Phenolphthalein. Acts in about 6 hours and has no constipating after-effect. Sometimes loses its effect on continued use, and may cause diarrhœa. Dose: 3 to 5 grains *t.i.d.*, in powder, pill or capsule. Five grains are probably the largest safe dose. In a child, begin with ½ grain. *Gilbride.* 172

Placenta, Premature Detachment of Normally Situated. TREATMENT. Rupture of membranes and rapid delivery not to be done till uterus contracting, patient rallied, and os somewhat dilated. Where no contractions, no dilatation, and patient in collapse, use tampon and binder until patient and uterus have recovered. This enables uterus to withstand pressure of blood within it and so controls hæmorrhage. *Goldstine.* 300

Pleural and other Effusions. TREATMENT. To prevent recurrence, after aspiration, of serous effusions into the pleura, peritoneum, tunica vaginalis, etc., 8 minims to 2 drams (according to size of cavity) of suprarenalin or adrenalin in four times the quantity of saline solution may be injected into the cavity. *Sajous.* 76

Strong galvanic currents employed in serous effusions, using as positive electrode a cotton wad soaked in 10 per cent. sodium bicarbonate solution and as negative electrode one soaked in 5 per cent. tartaric acid. Daily applications of one hour, with current of 15 or 20 milliampères, gradually and cautiously increased up to 50 or 60. Fluid promptly reabsorbed in many cases of peritoneal, pleuritic and even pericardial effusion. *De Renzi.* 234

Pleurisy, Syphilitic. DIAGNOSIS. All serous exudations in syphilitics cause deviation of the complement; hence a diagnosis of syphilitic pleurisy, as distinguished from pleurisy of other origin in a syphilitic, must be based on data other than the serum reaction. *Roger and Sabarèanu.* 173

Poliomyelitis, Epidemic. PROPHYLAXIS. Nasal and buccal secretions should be disinfected. *Flexner and Lewis.* 231

Puerperal Infection. LOCAL TREATMENT. In ulcerative endometritis, vaginal douching and drainage of uterine cavity. Where retained material with normal temperature, or where serious hæmorrhage, prompt evacuation of uterine cavity. Where moderate fever and general condition good, delay interference a few days to a week, awaiting spontaneous evacuation. Where high fever or severe toxic symptoms, especially if virulent streptococci in vaginal discharges, curet. If symptoms of

extra-uterine infection, strictly avoid curettage (unless serious hemorrhage). Curettage, where indicated, best done with finger. *Winter*. Page 300

Pyelitis in Infants. DIAGNOSIS. Of 9 cases in children ranging in age from 9 months to 2½ years, 6 had high fever; 5, frequent micturition; 3, chills; 1, pain, and 1, tenderness in lumbar region. None vomited. Diagnosis depends on urinary findings; pus, epithelial cells, occasionally blood-corpuscles, and no casts.

TREATMENT. Urotropin, ½ to ¾ grain every two hours, very effective. *Gray*. 174

Pyloric Spasm of Infants. TREATMENT. High rectal instillations of Ringer's fluid (sodium chloride, 7.5 grams; potassium chloride, 0.42 gram; calcium chloride, 0.24 gram; boiled water, 1 liter) gave good results. Half a liter of solution is introduced in 2 hours, and the procedure repeated morning and evening. Vomiting ceases after a few days' treatment. *Rosenstern*. 232

Pyloric Stenosis, Congenital. TREATMENT. Fat-free feedings advocated, vomiting and hyperperistalsis having thereby been caused to subside in 2 cases. First give a tapioca preparation, alternating with a suspension of flour in water; then give latter alone. Flour employed to contain not over 5 per cent. fat. Add occasional nutrient enemata of albumose and sugar to keep up infant's weight. After several days return to normal amount of food—more or less gradually, according to severity of case. *Nolf*. 424

Radium. Permanent radium emanations can be established in certain organs, the blood, or the whole body, at will, by injecting finely divided radium sulphate suspended in saline solution isotonic with blood. Therapeutic results obtained: 1. Relief of pain in malignant growths, deep infections, tuberculous meningitis, etc. 2. Diminished inflammatory oedema around malignant growths, tuberculous lesions, infected glands, etc. 3. Occasionally general improvement in tuberculous patients. 4. Retrogression of benign growths, as keloids. *Dominici*. 361

Rheumatic Heart Disease. DIAGNOSIS in children. 1. Subcutaneous nodules generally indicate active cardiac disease. 2. Evening fever without previous cause suggests fresh cardiac inflammation. 3. Joint pains. 4. Sudden appearance or increase in anæmia. 5. Persistently frequent pulse. *Carr*. 26

Septicæmia. TREATMENT. In the presence of persistently low blood-pressure, hypothermia, and cyanosis, adrenalin is valuable when very slowly administered intravenously in the proportion of 5 minims of the 1:1000 solution to a pint of warm saline solution (105° F.). It enhances pulmonary and tissue respiration and the activity of the immunizing process. *Sajous*. 75

Collargol found valuable in septicæmia and pyæmia of medium gravity, as well as in

obstinate febrile states due to reabsorption of toxins and associated with anæmia. Should be given in all cases of puerperal infection. It is best administered by slow intravenous injection of 1 to 2 c.c. of a 5 or 10 per cent. suspension. Probably acts as a catalytic, accelerating oxidation. *Albrecht*. 234

Shock. TREATMENT. Suprarenalin or adrenalin, very slowly administered intravenously; 5 minims of the 1:1000 solution to the pint of warm saline solution (105° F.). In urgent cases, 10 drops may be given in 1 dram of saline solution. Artificial respiration hastens effects. *Sajous*. 75

Shock, Postoperative. PROPHYLAXIS. Pituitary extract (1 cubic centimeter of 20-per-cent. solution of posterior lobe) was injected in three cases before complete recovery from the anæsthetic, in conjunction with normal saline by rectum. The pulse, previously barely perceptible, almost at once became large and bounding, slow, and regular, this effect lasting 12 to 16 hours. *Wray*. 93

TREATMENT. In shock after abdominal operations, remove two skin-sutures near navel and insert glass tube joined by rubber tubing to receptacle containing saline solution at 112° F. Pass the tube upward beneath omentum and transverse mesocolon to region of solar plexus, and run in one pint of hot saline, causing rise of blood-pressure by heat and pressure stimulation of sympathetic system. Remove tube, cover wound with gauze, and apply binder to sustain pressure. Inject 10 ounces of hot saline in rectum every 2 hours. *Hopkins*. 159

Sinus Disease. TREATMENT. Case of chronic suppuration of antrum in which the discharge and subjective symptoms were greatly relieved by 5-grain doses of hexamethylenamin three times daily. *E. J. Brown*. 353

Skin Growths and Ulcerations. TREATMENT. Powdered potassium permanganate used as a caustic for benign and malignant neoplasms, lupus, keloids, chancroids, cavernous angiomas, etc. Surrounding healthy skin is protected by rings of adhesive plaster piled one over the other, with central opening slightly larger than area to be cauterized. Powdered permanganate is then poured in and covered over with adhesive. After 48 hours, a softened mass alone remains of the growth. Upon removing this a sharply-defined depression is revealed, which heals rapidly. The procedure is usually painless. *Finck*. 232

Splenic Enlargements, Primary. TREATMENT. Iron, arsenic, iodine, glandular and marrow extracts have only a temporary or uncertain action in these conditions. X-rays cause general improvement in Banti's disease, and should be projected over the spleen through an aluminium screen. Except in infantile splenic anæmia, splenectomy is,

however, often preferable in that it yields lasting benefit. *Bozzolo*. Page 175

Stricture of Urethra. TREATMENT. OPERATIVE. Median incision down to urethra, dividing structures of bulb in median line. Divide stricture by longitudinal incision $1\frac{1}{2}$ inches long. Remove excess of scar tissue, or excise whole strictured portion if necessary. Mobilize anterior segment of urethra and join to posterior segment without tension, sutures being passed from without inward. If roof of canal has been left intact, bring together margins of longitudinal incision transversely, as in pyloroplasty. When $\frac{1}{2}$ of circumference sutured pass No. 28 sound into urethra; complete the sutures around it. Open urethra on the sound at a point as far behind stricture as possible and introduce No. 12 (English) soft-rubber catheter. Suture wound in layers, leaving space at lower angle for catheter. Resection applicable to all strictures of bulbomembranous portion not amenable to gradual dilatation and not complicated by infiltration of urine or fistulas. *Cabot*. 126

Suprarenin. Poisonous dose varies with the individual. Danger arises from: 1. Concentration of solution used. Large amount of a weak solution is without danger. 2. Method of introduction. Intravenous injection gives immediate bad effect; locally or subcutaneously it is well borne. Author employs solution of 0.64 gram suprarenin borate in 100 cubic centimeters of 0.5 per cent. novocaine, made up fresh from tablets for each operation; 125 cubic centimeters of such solution used without danger. *Braun*. 127

Syphilis. TREATMENT. Mercurool found useful to alternate with the protiodide and in cases where the ordinary preparations of mercury cannot be assimilated; gr. j three or four times daily. Author advocates course of twenty inunctions of the official ung. hydrarg. at the outset of every case of syphilis, before beginning internal administration. Where latter causes serious gastro-intestinal disturbance, and the symptoms of the disease are marked, inunction treatment is to be adopted. Course of three weeks of inunctions in the spring and fall for four or five years recommended. In cases of ulcerating tubercular syphiloderma and gummata best results obtained using potassium iodide (gr. x-xx *t.i.d.*) along with mercurial inunctions twice daily. Mercury is as valuable in tertiary as in secondary syphilis. *Christian*. 45

Tabes. TREATMENT. Strychnine in gradually increasing doses arrested progress of the condition in almost all cases. Begin with $\frac{1}{30}$ grain *t.i.d.*, increase to $\frac{1}{20}$ at end of first week, to $\frac{1}{16}$ at end of second, then add one drop of a solution of 1 grain of strychnine in 1 ounce of water. Increase by a drop every day till total dose is $\frac{1}{8}$ grain *t.i.d.*, which is maintained for 3 months. Then increase as before until $\frac{3}{16}$ is reached, maintain for 3 months, etc. Maximum dose of $\frac{1}{2}$ grain being reached, it is maintained for a year, then

gradually reduced. Results obtained: pains disappeared, bladder and bowel control regained, locomotion much improved; general amelioration. *Hammond*. 236

Tetanus. PROPHYLAXIS. While 1500 units of antitoxin will prevent tetanus in wounds without severe mixed infection, it may fail when used only once when there is mixed infection lasting over 10 days. In such cases antitoxin should be repeated every week while infection lasts. *Rovan*. 364

Tetany. TREATMENT. Infundibular extract (20 per cent.) of Burroughs, Wellcome & Co., recommended; given by intramuscular injection in doses of 7 drops *t.i.d.*, or oftener. If used subcutaneously it might cause necrosis of skin by vasoconstriction. Not poisonous. *Ott and Scott*. 99

Tetany, Gastric. TREATMENT. Soluble calcium salts rapidly control symptoms in the tetany of gastrectasis; continued use required. Large saline infusions, as well as parathyroid preparations (nucleoproteid) by the mouth, are but slightly effective. *Kinnicutt*. 123

Tic. DIAGNOSIS. True tic, which is of psychic origin, and is a sequel to the unhindered repetition of a once voluntary purposive act, is distinguished from spasm, which is due to irritation of any reflex arc of the bulbospinal tract, as follows: 1. Movement slower. 2. Occurs in volleys. 3. No muscular weakness. 4. Reflexes normal. 5. Painless. 6. Disappears in sleep. 7. Pseudo-coördinate and intentional. 8. Influenced by volition or emotion, and followed by satisfaction. Upon this distinction depends whether treatment shall be surgical, medical or psychotherapeutic. *T. A. Williams*. 5

Toxæmia of Pregnancy. TREATMENT. Failure of thyroid gland to hypertrophy during pregnancy probably related to toxæmia. Administration of thyroid beneficial by supplying this deficiency and by diuretic action. Saline extract of fresh human thyroid proteids more rapid and reliable in action than ordinary sheep thyroids. Hypodermic use of thyroid proteids greatly superior to oral use. *Ward, Jr.* 27

Traumatic Neurosis. DIAGNOSIS. In response to galvanism the anodic closure contraction equals or surpasses the cathodic closure contraction, as in the reaction of degeneration, but in tracings of muscular contractions the peaks are not rounded as in the reaction of degeneration, but sharp and angular as with normal contractions. Increased excitability is observed on both affected and sound sides. *Larat*. 124

Tuberculosis of Bladder. TREATMENT. 1. General hygiene. 2. Internally, 5 grains of guaiacol carbonate *t. i. d.* 3. Locally, instill into bladder every other day 20 drops of 20 per cent. iodoform emulsion in liquid alboline, with deep urethral syringe. *Christian*. 417

Tuberculosis of Larynx. TREATMENT. Case with marked infiltration of epiglottis and aryepiglottic folds, and ulceration of one vocal cord, in which three applications of galvanocautery led to recovery. Powder of anæsthesin and orthoform, equal parts, inhaled into larynx for pain. *D. Grant.* 25

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Tuberculosis, Pulmonary. DIAGNOSIS. X-ray method contributes to early diagnosis. Where symptoms point to pulmonary lesion but no physical signs are demonstrable, radiography may show peribronchial infiltration or enlarged bronchial glands. Later, consolidated areas and cavities can be accurately located at any depth within the lung. *Leonard.* 177

TREATMENT. Mercury succinimide administered hypodermically in 8 cases caused general improvement and appeared to exert a marked controlling influence over the tuberculous process. *Freeman.* 90

Beechwood creosote given both internally and by inhalation affords much relief to symptoms in nearly all cases and in all stages. It is also valuable as a preventive in those predisposed or exposed to the infection. Rest, fresh air, proper food, with or without lime salts. *Beverley Robinson.* 23

Menthol ointment (30 or 40 per cent.) used with benefit. It is rubbed in daily for 10 minutes, skin of back, chest and thighs being successively employed. Improvement manifest alike in symptoms and physical signs. Probably acts directly on involved tissues. Treatment should be persisted in for 4 months or more. Also valuable in old fibroid pneumonias. *Stepp.* 238

Early tuberculosis treated by antiseptic inhalations with remarkable results. Solution used: Phenol, creosote, spirits of chloroform, of each 8 cubic centimeters (f3ij); tincture of iodine, spirits of ether, of each 4 cubic centimeters (f3j). Of this 6 to 8 drops are poured on the felt or sponge of Yeo's perforated zinc inhaler, and inhaled regularly every hour in the daytime, as well as 2 or 3 times during the night, when patient is awake. Cough is thereby relieved without sedatives and expectation facilitated. Where hæmoptysis, add turpentine to the solution. In all cases patient should rest in bed for a week, with windows of bed-room open. In second week he may rise for an hour or two daily, and later walk in the open air every morning. When temperature is normal, use of inhaler may be gradually left off. *Lees.* 93

Two cases distinctly improved in all respects by treatment with thymus gland; 30 to 120 grains three or four times daily. Author uses fresh thymus of calves, dried by himself. *Gwyer.* 424

Tuberculosis, Superficial. TREATMENT. Mercury succinimide (gr. $\frac{1}{2}$ subcutaneously every other day) with mercury protiodide (gr. $\frac{1}{4}$ by mouth *t.i.d.*) gave good results in two obstinate cases of scrofuloderma and

one of pharyngeal infiltration. Curetting, cauterization and X-rays ineffective until mercury added. *Hertzberg.* 25

Typhoid Fever. **INTESTINAL PERFORATION.** Mortality after operation for perforation in children is below 50 per cent.—25 per cent. lower than in adults. *Jopson and Gittings.* 25

RUPTURE OF SPLEEN. This accident occurs most frequently in beginning of the third week, or in convalescence. The enlarged typhoid spleen should be merely touched daily, not handled. **PROPHYLAXIS:** Ice-bag to the spleen. **DIAGNOSIS:** Preliminary pain under left costal arch, sudden increase of pulse-rate by 20-30 beats, evidence of internal hæmorrhage, followed by rapid rise of temperature; liver dulness not obscured; X-rays. **TREATMENT:** Immediate saline infusion and Fowler's position, splenectomy, followed by continuous peritoneal lavage with two glass tubes, below diaphragm and above pubis. *Bryan.* 28

TREATMENT. Alcohol compresses to the abdomen in children advocated in preference to the cold tub-bath treatment, which author regards as favoring hæmorrhage or perforation and as liable to work injury to the heart. Compresses used in 12 severe cases which were rendered milder. Pad of absorbent cotton or eight thicknesses of gauze wrung out in 85 per cent. alcohol (90 per cent. for adults), applied to abdomen, covered with cold-water gauze compress, and held in place by flannel band. Water compress renewed every hour, alcohol compress every 2 hours. Acts by local active hyperæmia, while alcohol absorbed stimulates heart. Used also in peritonitis and appendicitis with benefit. *Cheinisse.* 122

Ulcer of Leg, Syphilitic. TREATMENT. Reduce alcohol consumed. Mercury and iodides, preferably organic iodides, well diluted, alternated with courses of strychnine particularly when ulcer again becomes sluggish. General antiseptic application: Boroglyceride 3j, hot water Oss. Locally, black or yellow wash; solution of phenol (1 to 100); tincture of iodine (1 to 4 or 5 of hot water); ammoniated mercury or yellow oxide ointments. Dry treatment: Zinc oxide 3iij, calomel, 3ss, infusorial earth q. s. ad 3j. X-rays have benefited some cases. Where ulcer resists cure due to tethering of its edge to underlying bone, apply antiseptic fomentations, scrape ulcerated surface with Volkman's sharp spoon, undercut edges with scalpel, and draw them together, freshening skin-margins. *W. Evans.* 23

Uncinariasis. **DIAGNOSIS.** In mild cases eosinophilia is often not available for diagnosis. Following method recommended: Dilute faecal material ten times with water and centrifugate at high speed for 6 or 8 seconds. Pour off supernatant fluid, shake sediment with water, and centrifugate again just long enough to throw eggs to bottom (usually 2 seconds). Repeat once or twice, remove sediment with pipette and examine

for eggs. Calcium chloride solution assists in removal of debris. Large amounts of feces may have to be examined before eggs discovered. *Bass.* Page 168

Varicocele. PROGNOSIS. Investigation of results of operation in 39 cases. Data obtained one to ten years after operation. Thirty-six per cent. still had pain in testicle or groin, 31 per cent. tenderness in testicle, 27 per cent. sexual hypochondriasis. No atrophy of testis due to operation. Recurrence in 6 per cent. Operation acknowledged distinctly beneficial in 80 per cent. *Barney.* 427

Vomiting in Infants. TREATMENT. Condition often a mere habit, vomiting reflex being established owing to former injudicious feeding. Administer chloral, bromide or chloretone until habit is broken; or better, exhaust the vomiting center by giving harmless emetic, as wine of ipecac and carbonate of ammonium, half an hour before feeding. Latter method used in 55 cases; immediate cure in 30, and improvement in 10. *Pritchard.* 239

Vomiting of Pregnancy. TREATMENT. Adrenalin used with success in a case previously uncontrollable. Ten drops of 1 to 1,000 adrenalin solution given morning and night, at first in enema of 150 grams (5 ounces) water with 20 drops of laudanum, after 3 days in ice-water by the mouth. Nutrient enemas also given. Vomiting ceased on second day, and on third patient could retain a little food. Recurrence of nausea

toward end of pregnancy relieved by 10 drops daily for 5 days. *Rebaudi.* 94

Vomiting, Postoperative. TREATMENT. Where nausea, vomiting or gaseous distention after abdominal section, employ gastric lavage, which often checks incipient peritonitis. Spray pharynx with 2 per cent. cocaine solution 10 minutes before tube introduced. *A. J. Ochsner.* 360

Wassermann Reaction. Positive reaction often noted in cases of leprosy giving no history or symptoms of syphilis, chiefly in the tubercular and mixed forms of the disease (31 out of 38). In cases of the maculo-anæsthetic and purely trophic type it is usually negative (3 positive out of 22). *H. Fox.* 355

Whooping-Cough. TREATMENT. Oxygen used in 30 cases. It is given at each paroxysm. Cyanosis subsides and suffocation is prevented. Child keeps in good condition with appetite throughout. It is best inhaled through a funnel; 10 to 12 liters necessary to control a paroxysm. Where broncho-pneumonia threatens, oxygen should be inhaled every hour; it renders lung aseptic. *Weil.* 64

Quinine salve applied to nasal mucous membrane with benefit. Used 1 to 2½ grams of quinine in 10 to 15 grams of lard (30 grains to 2 drams in 1 ounce), and introduced piece of salve size of pea into each nostril 3 to 4 times daily with glass rod, head being thrown back. Symptoms much improved after 3 or 4 days. Especially effective in very young children. *Berliner.* 301

Book Reviews

A TEXT-BOOK OF PHYSIOLOGY for Medical Students and Physicians. By William H. Howell. Ph.D., M.D., LL.D., Professor of Physiology, Johns Hopkins University, Baltimore. Third Edition, Thoroughly Revised. Octavo of 998 Pages, fully Illustrated. Philadelphia and London: W. B. Saunders Company, 1909. Cloth, \$4.00, net; Half-morocco, \$5.50, net.

Howell's "Physiology" has acquired an enviable reputation among teachers and students as a safe guide. The book being written mainly for students, the author limits himself to generally accepted facts, leaving out of consideration the many problems which are now agitating physiologists and clinicians. This accounts doubtless for the rather ancient ideas on the functions of the ductless glands to which the author confines himself. In other directions, however, due attention is given to the more notable advances in physiology, this being aided by brief summaries which give the essential points of some of the pending discussions. The new edition of Professor Howell's work, which is well printed and illustrated, will undoubtedly sustain the reputation of the previous editions.—C. E. DE M. S.

DIAGNOSTIC METHODS, Chemical, Bacteriological, and Microscopical. A Text-book for Students and Practitioners. By Ralph W. Webster, M.D., Ph.D., Assistant Professor of Pharmacological Therapeutics and Instructor in Medicine in Rush Medical College, University of Chicago; Pathological Chemist of Cook County Hospital, Chicago. Octavo of 611 Pages, with 37 Colored Plates and 164 other Illustrations. Philadelphia: P. Blakiston's Son & Co., 1909. Cloth, \$6.00, net.

This book is one of the most satisfactory of its kind we have examined of late, so replete is it with properly selected, exhaustive, and therefore useful information upon laboratory

diagnostic methods. It will prove especially valuable also through the fact that the description of these methods is very clear, thus enabling the tyro, the beginner, or the physician who wishes to avail himself, even without specific instruction, of advanced knowledge, to become proficient if the directions are carefully followed. Nor does the author hesitate to point out and condemn methods which he has found in his own experience valueless.

The chapter on the blood is admirable, and its usefulness is still further augmented by beautiful illustrations. This applies also to the chapter on parasites.

The book covers subjects that are missed, as a rule, in works of this kind, *e.g.*, the laboratory examination of the nasal and conjunctival secretions. Urinalysis is fully represented in 200 pages of text. Dr. Webster's book is a credit to its author and to the publishers.—C. E. DE M. S.

SCIENTIFIC LIVING for Prolonging the Term of Human Life. The New Domestic Science. Cooking to Simplify Living and Retain the Life Elements in Food. By Laura Nettleton Brown. New York: Health-Culture Co., 1909.

Mrs. Brown has here presented us with an excellent cook-book in which she has incorporated a cheerful admixture of optimism, current philosophy, some emotional uplifting, and a lot of good common sense. The first chapter, on "The Purpose of Life," is useful and edifying. We then learn of the "Normal Man," of his guiding star, touching upon destructive agencies such as cancer; then the indices of longevity, the value of natural relaxation, and why the simple life is popular, or ought to be. Then we have the great central truth in all hygienic systems based upon individual views on the peculiar actions of the vital currents, etc. Then, recommendations as for the regulation of life; next, the purpose of regular eating; the living cell in food; the importance of proteid, and, finally, why people can live at all. Then follow: "The Object in Cooking," "Scientific Application of Heat," a number of exact, useful views on the preparation and presentation of foods, and, last of all, excellent methods for scientific cooking and precisely how these may be learned and applied.—J. M. T.

A TEXT-BOOK ON THE PRACTICE OF GYNECOLOGY for Practitioners and Students. By William Easterly Ashton, M.D., LL.D., Professor of Gynecology in the Medico-Chirurgical College of Philadelphia, and Gynecologist to the Medico-Chirurgical Hospital; Fellow of the American Gynecological Society. Fourth Revised Edition. Octavo of 1099 Pages, with 1058 original line Drawings. Philadelphia and London: W. B. Saunders Company, 1909. Cloth, \$6.50, net; Half-morocco, \$8.00, net.

In the fourth edition of this text-book such changes have been made as were necessary to present recent advances in gynecology. The chapter on constipation has been amplified, and the indications for the use of indoor exercises made to harmonize with modern views on defective body form in its relation to displacements of the abdominal and pelvic viscera. The treatment of erysipelas of the vulva has been brought up to date, and the local use of magnesium sulphate in this condition described. The operative treatment of pelvic suppuration has been altered, drainage by the vagina being emphasized. In the chapter on ectopic gestation the question of the proper time for operation in hæmorrhage, due to tubal rupture, is thoroughly discussed. Additions have also been made to the sections dealing with the treatment of cystitis and of tuberculosis of the genital organs. Certain changes in the technic of abdominal and pelvic operations are introduced, the pathology of shock rewritten, the subject of peritonitis brought up to date, and the Fowler-Murphy method of treatment given in detail. The chapter on movable kidney has also been carefully revised.

The work preserves all the useful features of previous editions, such as numerous drawings illustrating the diagnostic methods and measures of treatment discussed, the best possible arrangement of the text, with subheadings in heavy type, lists of the instruments required in each operation described, and a complete detailed description of every therapeutic procedure recommended, whether medical or surgical. One objection which may be raised is that, as a rule, no latitude is given in the operative procedures described, but one method of dealing with each pathologic condition being given. It is plain, however, that, had the missing operations been included, the work, already somewhat too large for the use of the medical student in his overcrowded curriculum, would have reached still more undesirable dimensions. Notwithstanding the above shortcoming, the work is an extremely valuable one for the practising physician, and is also a model text-book of its kind.

INFANT FEEDING. A Practical Guide to the Artificial Feeding of Infants. By J. S. Fowler, M.D., F.R.C.P., Physician to the Royal Hospital for Sick Children, Edinburgh; Joint Clinical Lecturer on Diseases of Children, University of Edinburgh. Pp. x + 230. New York: Oxford University Press, 1909. Cloth, \$1.50.

The artificial feeding of infants enhances to such a marked extent their vulnerability to disease, as emphasized in recent years by many writers, that we cannot welcome a work which does not lay stress on this fact, while extolling nature's own method of feeding infants—that

afforded by maternal milk. Indeed, we look upon the neglect of this fact by physicians and mothers as akin to a crime, so greatly does it influence the mortality of early childhood. That in certain instances artificial feeding must be resorted to cannot, however, be gainsaid, and it is for these only that we can recommend a book such as Dr. Fowler's, which, in a lucid way, enumerates methods that in his wide experience have given the best results. Rotch's percentage system is not looked upon with favor, but the author sustains by his own results Budin's method of giving fresh, undiluted, sterilized cows' milk.—C. E. DE M. S.

BACTERIOLOGY FOR NURSES. By Isabel McIsaac, author of "Primary Nursing Technique," "Hygiene for Nurses," etc. New York: The Macmillan Company, 1909.

The list of text-books for nurses has recently been growing at a rapid rate. This new addition aims to give the student nurse a general idea of the scope of bacteriology and to emphasize those portions of the subject that bear directly upon her work in the preparation of dressings, the maintenance of asepsis, etc. This, in our opinion, is the best feature of the book, for it would appear to us that laboratory procedures, such as the preparation of media, the examination of cultures, belong rather to the trained physician, acting as assistant, than to the nurse, whose duties are of quite another order. The book contains a number of grammatical and scientific errors which tend to diminish greatly its value as a text-book. On the whole, we do not think that a nurse should undertake to write such works.—C. E. DE M. S.

MARRIAGE AND DISEASE. Being an abridged edition of "Health and Disease in Relation to Marriage and the Married State." Edited by Prof. H. Senator and Dr. S. Kammer, Berlin. Translated from the German by J. Dulberg, M.D., Manchester, England. Octavo of 452 Pages. New York: Paul B. Hoeber, 1909. Price, \$2.50.

This abridged edition of the larger work by the above mentioned authors covers the all-important subject it treats in a most praiseworthy manner. As stated in the preface, it contains "a mine of information which is of the utmost interest to the general public." Were its pages carefully studied by prospective brides and grooms, many, too many, perhaps, would be deterred from entering the bonds of matrimony owing to physical defects; but, to the physician who knows how to temper the zeal of well-meaning authors, the book is of exceptional value.

THE ELEMENTS OF THE SCIENCE OF NUTRITION. By Graham Lusk, Ph.D., M.A., F.R.S. Edin.. Professor of Physiology at Cornell Medical School, New York. Second Edition, Revised. Octavo of 402 Pages, Illustrated. Philadelphia and London: W. B. Saunders Company, 1910. Cloth, \$3.00, net.

The teaching of dietetics, so prominent a factor in all well-appointed medical schools, includes fundamental facts of chemical kind without which the subject as a whole proves quite unintelligible. These are reviewed in a comprehensive manner in the present work, which aims to describe the scientific substratum upon which rests the knowledge of nutrition both in health and disease. In this the second edition, the author has incorporated the facts which have been brought to light during the past three years. He overlooks, however, the important rôle of the internal secretions in metabolism, and is thus driven to the admission that the first cause of the chemical changes which constitute metabolism is unknown. Barring this important omission, the work is entitled to commendation.—C. E. DE M. S.

ANGINA PECTORIS. By Edmund von Neusser, Professor of the Second Medical Clinic, Vienna; Associate Editor of Nothnagel's Practice of Medicine. Authorized English Translation by Andrew McFarlane, M.D., Professor of Medical Jurisprudence and Physical Diagnosis, Albany Medical College. New York: E. B. Treat & Company, 1909. Cloth, \$1.00.

This small monograph contains Professor von Neusser's views on the symptomatology, etiology, diagnosis and treatment of angina pectoris, based on a long and varied experience with these cases. The symptoms are discussed at considerable length, and the significance of the numerous variations in them explained insofar as present knowledge permits.

With regard to the etiology, Neusser believes the vascular theory of stenocardia insufficient to explain all the phenomena observed, and is inclined to accept rather the nervous theory. The differential diagnosis between true angina and the functional conditions, accompanied by retrosternal pain with which it may be confounded, is given with great clearness. A number of illustrative cases have been introduced. The section on treatment is, unfortunately, a short one. On the whole the work, while short, is one which will well repay careful reading.—L. T. DE M. S.

The General Field

The Medical Wisdom of the Nebraska Legislature

While the greatest medical minds of the world are at present painstakingly studying the therapeutics and hygienic treatment of lung tuberculosis and admitting in an optimistic way, of course, that there is a great deal to be proven as to the soundness of many methods now employed in combating this disease, the legislature of Nebraska has jauntily assumed a responsibility which the ablest physicians will not do, and has passed a law regulating the treatment of the tuberculous poor who may be so unfortunate as to have to apply to the municipal or State authorities for aid.

There is such a practical ring to the phraseology of one section of this act that we cannot refrain from reproducing it in part:—

“Provided, that the charge at any such hospital for any patient under this act shall not exceed seven dollars per week and shall include board, lodging, care and medical services, and provided, further, that it is made obligatory for any such hospital or sanatorium to use the modern treatment by immunization (vaccine therapy) in addition to open air and other sanitary methods.”

Why should this question be studied any further? The Nebraska legislature has in a few minutes settled the whole problem.

Pessimistic

Secretary Wilson has imported a lot of animals which are named sheep, but which look like goats, act like goats and, so it is said, taste like nothing at all.

His idea is to cross these with South down sheep and produce a brand of animals which will be edible and profitable to all concerned. It is the confident hope of the learned biologists of the Agricultural Department that we shall soon have sheep in profusion which will live comfortably on what goats would despise. Thus we shall have cheap wool and low-priced lamb. All this smacks too much of the millenium. We have been looking for wheat which grows one hundred bushels to the acre, cattle which reproduce like guinea pigs, and potatoes, like those of Lord Rosebery, which grow two thousand bushels to the acre. Unfortunately not much happens.—*Philadelphia Bulletin*.

The Milk Question

A contrast of the present-day discussion of milk as a factor in the food supply, with the general knowledge and attitude of the public regarding the same question ten years ago, would reveal a remarkable instance of rapid education.

While the average family has learned a great deal that is of value in relation to the use of milk as a food, it is generally very badly informed as to the factors that enter into the production of a normal and adequate supply of this important article.

The *New York Medical Journal*, in a recent issue, refers to the attitude of certain newspapers as to laboratory experiments with animals in the following admirably selected terms:—

“It is providential that certain sensational newspapers of large circulation are only read for their news columns, their opinions being a subject of derision.”

It would be well if the average manager of the household could bear this in mind in connection with the milk problem.

The circulation of the sensational newspapers is a purely local one, and it is one of the pleasant fictions of the trade that this class of publications act as guardians of the welfare of their readers.

It will be noticed by all who watch the discussion of the milk question in the newspapers that, whenever the question of a raise in the retail price of milk comes up, the newspapers wax wroth against the plutocratic farmers held to be responsible for the contemplated outrage, but that they deal very gently with the milk retailers. Reference to the advertising pages of the same journal will commonly show the reason why.

There is no place where education of the public is more urgently needed than in the consideration of this same milk problem. Milk is a vitally important factor in the nutrition of the young, the aged, and those who may be temporarily in impaired condition of health. It is the first principle of nourishment generally considered. It should be delivered to every householder free from disease, from chemical modification, and from the advanced agencies of decomposition.

It seems to be the policy of the large milk dealer to establish so perfect an organization that the farmer must be compelled to furnish milk at a price that gives him little profit, while incidentally forcing the consumer to pay three or four times as much for the milk as the farmer gets. This plan, coupled with an economy in handling and delivering that makes the milk stale when it reaches the consumer, has one thing only to commend it: it makes a few dealers wealthy.

The municipal control of public utili-

ties, if applied to the solution of the milk problem, might accomplish wonderful results. On the other hand, it might prove to be a very dismal failure. The experiment, however, would seem to be worth trying in certain localities where the organization of retailers has reached a degree of perfection only paralleled by the organization of the meat trust.

The individual who is mean enough to steal pennies from a baby has been held up to execration for a long time. He is, however, a courageous gentleman compared to the individuals now actively engaged in standing between the pale and listless infants of the city slums, and the farmer struggling to make ends meet on the distant hilltop.

The Fashionable Suburb and the Public Health

There seems to be an idea prevalent among the inhabitants of fashionable suburban places that people fortunate enough to live in pleasant cottages surrounded by well-kept lawns should be immune to the inconveniences more or less inevitably associated with the restraint of contagious diseases. It is a very annoying thought to the owners that the entrance of a Queen Anne or colonial cottage should wear the yellow badge of a scarlet-fever case, and not uncommonly such people have been able to secure exemption from these wholesome regulations.

There is, perhaps, no time, however, when the fashionable suburb appears in a more unpleasant light than when it is protesting against the establishment of a sanitarium for the restoration of the children of the poor. Two fashionable resorts in New Jersey have recently had the unenviable notoriety of such a contest. At Lakewood the property owners were able to materially impede, if not

wholly cripple, a very commendable movement for the establishment of an open-air sanitarium for children threatened with tuberculosis. A similar institution established at Ventnor, near Atlantic City, has met with the usual storm of indignation and legal process on the part of property owners, such efforts, however, having proved unavailing thus far.

Tradition tells of an Italian Grand Duke who, in time of virulent plague, withdrew to his country estate with a carefully chosen party of satellites, a cordon of guards being placed around the grounds with strict orders to prevent the approach of individuals from any point whatever. These orders were complied with to the letter until the ravages of the plague had been checked, after which it was found that the entire household of the Grand Duke and his visitors had perished in the seclusion for which they had planned so selfishly and so successfully.

The selfishness of the fashionable community is responsible to a greater extent than anything else, high prices not excepted, for the development of the socialistic sentiment in the United States.

A Widely Prevalent Mental Disorder

The perfectly normal mind is incapable of being swerved from its rational poise by envy. There seems to be, however, many instances of distorted mental vision due to this particular cause.

While it is necessary that the interests of society in general be safeguarded against the encroachment of combinations of capitalists, it is very undesirable that feeling of jealousy, envy, and general antagonism toward people of wealth

should prevail. In the dark ages nations went to war over the most trivial matters, and at no very remote periods commercial wars have been waged because of the failure of the wife of some magnate to recognize socially the wife of some other commercial giant.

The doctor well knows that the good things of this life are distributed much more evenly than oftentimes appears on the surface. The self-made man is often too busy to properly rear his children, and his last days are embittered because of the inevitable results of his negligence. The successful social leader who rules with a rod of iron at home and abroad, and whose edict decides who is eligible to her social circle, is often far from attractive, in a personal sense, to her husband.

Ambition is essential to development, but ambition which leads to abnormal development is a pathological condition.

Perhaps after all the greatest penalty the ambitious couple pay for that business success which brings wealth is the fact that, on the passport of wealth, they frequently move out of the congenial circle of their youthful friends into an uncongenial circle of prosperous acquaintances.

Envy of the well-to-do should have no place with those who possess reasonably good health, friends, and an agreeable environment.

Where the Health Missionary is Needed

Some very well meaning persons are perfunctorily earning their salaries by visiting those residents of the so-called slums that have, in the estimation of the worthy spinsters who are most active in such movements, been very indiscreet in the matter of raising, or attempting to raise, large families.

When the hired philanthropist explains to the busy housewife that she should not give the baby beer, and that the baby should have a bath real often in hot weather, and that it should not wear heavy red flannel in midsummer, she is often surprised and annoyed at the lack of appreciation shown by the person in whose welfare she has been laboring.

Why would it not be worth while, just for a change, to engage some of the robust pioneer women from the countries of Southeastern Europe to instruct some of the native American women in matters relating with equal pertinence to the welfare of society? Their suggestions might not be any more graciously received than in the other case, but they would be equally practical. For example, suggestions from some of the full-chested, robust immigrant types as to the nutrition of infants would be of great value. In a large number of instances emphasis placed upon the importance of the mother so modifying her diet as to provide natural food for her infant, irrespective of any incidental gain in her own weight while that process was going on, would be as useful to the community at large as some of the lessons now being imparted in other directions.

A Remedy for Sleeplessness

An enumeration of the causes of insomnia, as experienced in the suburbs of a large city, would show pretty well up toward the top of the list the complaints of the dog, left to his own reflections during the small hours of the night.

It is a unique characteristic of human nature that it will often show extraordinary zeal in searching for a cure

without devoting any attention worth mentioning to the removal of the cause. Granted, that the insomnia of the dog is responsible for the insomnia of a large number of people in the immediate neighborhood, it is hardly logical for the sufferers from insomnia to drown their troubles by the use of narcotics and allow the misery of the dog to continue.

To the ordinary unbiased person the most practical thing to be done under the circumstances would be to remove the canine source of the mutual insomnia. For social reasons, however, this is often difficult.

Because of this peculiar obstacle a great variety of methods have been adopted to overcome the effects—psychological, pathological, spiritual, and otherwise—of the perpetuated canine soliloquy. A large number of residents of Philadelphia, Baltimore, Washington, Pittsburg, and other suburbs of Atlantic City are apt to seek surcease from insomnia and other home troubles by encountering worse ones at a beach hotel. A considerable number of these pilgrims having been annoyed by the persistent remarks of a certain dog with a “pull,” they resolved upon a novel procedure. They applied to the courts for, and secured, an injunction against the continuation by the dog of his soliloquy.

It is one of the sources of pride of every American citizen that the courts are always open to hear his complaints and redress his grievances. It looks as though the solution of the canine cause of so much insomnia has been reached. Papers served on a dog by a learned judge, authorizing the aforesaid dog not to continue his nocturnal remarks under penalty of being under contempt of court, should make an impression which the owner of the dog often seems to be unable to do.

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Original Articles

SENILE EPILEPSY.*

By EDWARD D. FISHER, M.D.,

Professor of Mental and Nervous Diseases, the University and Bellevue Hospital
Medical College,

NEW YORK.

UNDER this head I include only those cases which occur in adult life, and especially in the period when physical decline has already begun to show itself. The term epilepsy hardly applies here, but it is a name in use and cannot be discarded. The marked feature is the epileptic convulsion, as in essential epilepsy. The underlying cause is, however, essentially different, and marks itself out also by being usually localized in character, with, at times, a residual paralysis, which may last a few days, or an aphasia of short duration, if the seizure affects the right side of the body.

The underlying etiological factor is arteriosclerosis, which distinguishes it (absolutely) from essential epilepsy. The majority of cases coming under my observation have been men who have been very active in business life, perhaps inclined to good living, but not in any sense alcoholics, usually representing rather excessive brainworkers, characterized by their ability to manage large interests and little given to exercise or relaxation. Such men may be unusually vigorous and not aware of any excessive work or need of rest, reaching the age of fifty-five or sixty years without realizing that they have passed their youth and that the process of repair is not as rapid as in earlier life. There may have been few, if any, preliminary symptoms outside of some fatigue formerly unusual to them, or a slight weakness of memory for details or names, until, as out of a clear sky, an epileptic attack takes place, often without warning, perhaps following an exhausting day or a heavy dinner. Many of these

* Read before the Eleventh Annual Meeting of the American Therapeutic Society, held in Washington, D. C., May 5, 6 and 7, 1910.

cases are well nourished, although they may show signs of looking too old for their years. They may be addicted to stimulants in excess in the form of tobacco and coffee, and are often rather excessive meateaters. While arteriosclerosis is present, as shown in the external arteries, temporal and radial, and in the fundus of the eye, there is little evidence of kidney involvement, albumin and casts usually being absent.

We have then a type of man peculiar to our present modern life, of more than usual mentality, constantly engrossed in his business, with little variation and not given to social relaxation. As I have said, his life has been so pre-occupied in prescribed lines that he scarcely knows that he has passed life's meridian and makes no allowance for the exhaustion of overwork on a system which no longer responds by rest to produce complete recuperation. The arterial tension is usually somewhat low unless there is stress of mental work, or excitement, or following ingestion of food. Just preceding the attack, however, the arterial tension is very high and is (without doubt) its exciting cause, or at least the preliminary condition just before the seizure. This was especially marked in one case observed just before an attack. I have not included in this class of cases either those of alcoholic or syphilitic origin.

The course of the disease varies somewhat with the habit of life followed by the patient after his first seizure. The second attack may not take place for weeks or months. The exciting cause, then, may be given as due to exhaustion from overwork or some special excitement affecting the emotions, anger, or grief, but this is only the exciting cause; the fundamental cause is the arterial degeneration. Again, the seizures may be more frequent from the beginning, or there may be several seizures in succession, followed by a long interval before the next seizure. Other symptoms in the mean time are not marked, mostly being those of impaired memory for names and the more recent daily affairs of business. There may be some feeling of compression in the head, a dull, heavy headache rather than pain, and some dizziness. The arteries involved are probably cortical, the attack being due to temporary occlusion or stasis of the vessels, arterial or perhaps venous. There may be localized œdema or serous effusion, which, however, clears up, leaving no trace of paralysis or other impairment. There is probably a general arteriosclerosis of the cerebral vessels. The general tendency of the disease is toward dementia or premature senility, frequently accompanied by depression. The seizures may at times be very severe and suggestive of apoplectic attacks, and, in fact, may lead to or end in cerebral hæmorrhage of the usual type. I have no cases to report in which I have obtained an autopsy. The cases I report have been in private practice.

The differential diagnosis has to be made, especially in the younger cases, from general paresis or cerebral syphilis. The long course of the disease in many cases will aid us here, and the absence of pupillary changes found in specific disease is decisive; again, the negative Wassermann reaction is of diagnostic value. It is peculiar how few conditions present are indicative of organic changes in the arterial or venous systems, and yet how marked the

clinical symptoms are in their progression toward mental deterioration. I shall detail 4 cases which may be of interest.

CASE I. Male, sixty-three years of age, merchant, of temperate habits, with no specific history and very active in business affairs. He had not complained of illness. During rather an exciting period of business stress he was suddenly taken with a severe epileptic seizure involving the right side. He was supposed to have had a stroke. He made a complete recovery from this attack, with no evidence of paralysis remaining. He took a vacation and seemed well. Six months later he had a second seizure. The patient was very careful as to his diet. The attacks were never frequent, the patient going six months with but one seizure. During the last two years of his life he lived carefully, continuing in business and refusing all medication. The last seizure was apoplecticiform, with convulsions, right hemiplegia, and death.

CASE II. Male, fifty-five years old. His first attack was preceded by some mental disturbance. While on a business trip he became confused, lost the memory of his residence, became lost in his own city for a time and had a seizure with slight hemiplegia and aphasia lasting a few weeks. He made a good recovery and returned to business, remaining apparently well for a year. He then had a second attack similar to the first. None of his attacks have been severe, but the patient has been excitable, irritable, egotistical and mentally incapable of doing business. A diagnosis had been made of general paresis, but the case has not progressed on these lines, there being no Argyll-Robertson pupil, though gradual mental weakness.

CASE III. Male, sixty-five years old, merchant, no specific history. His first attack occurred in the morning and was very severe. Six months later the attacks became frequent, occurring every month. He gradually lost his memory, being unable even to remember his physician. He can, however, carry on routine business, but is gradually passing into dementia.

CASE IV. Male, sixty-eight years old, merchant. He had his first attack while in business. Each attack was due to some especial form of excitement. The patient was a heavy eater, but a very moderate user of alcohol and tobacco. His attacks lasted about half an hour, and he complained thereafter for several hours. He had little mental impairment, but still he was not the same man as formerly. His condition has improved with outdoor life and strict attention to diet and exercise.

The complete recovery from these attacks, although there may have been paralysis and aphasia present, shows that the cerebral condition is a temporary one. It is probably explained by the occurrence of a contraction of the caliber of the arteries, such as may be observed in the extremities, with temporary paralysis; the parts being ischæmic and œdematous. This has been observed in a case reported by Pal, in which the eye-grounds showed the arteries contracted and the veins empty; a condition which entirely cleared up after the seizure. It is an arterial condition similar to that which Russell described in an article entitled "Intermittent Closing of Cerebral Arteries; Its Relation to Temporary and Permanent Paralysis."¹ In temporary closing of the

¹ British Medical Journal, October 16, 1907.

arteries there is impairment of function, a halting of brain function from the closing of channels which convey the blood, a condition comparable to intermittent claudication. It is a similar arterial condition to that which we find in angina pectoris, a spasm of the muscular coat of the arteries; or, again, as we find it in the splanchnic system, with a sudden seizure of great lumbar pain or colic, similar to the cardiac pain of angina pectoris.² In one patient under my observation these conditions seemed to be confirmed. The onset of the attack seemed to be great pain in the lumbar region, extending forward to about the umbilicus and into the extremities, with a complete paralysis of the legs. The pain was so extreme as to require morphine; at the same time there was a right-sided convulsion, hemiplegia and aphasia, with partial coma. All these conditions cleared up more or less completely, to be followed in a few weeks by an attack of angina pectoris. These seizures were caused, in my opinion, by arterial spasm and contraction. The patient was about seventy years of age, very active in business, and not addicted to any excesses. He had arteriosclerosis with very slight interstitial nephritis and low arterial tension unless mentally excited or fatigued from close application to business.

The prognosis is not altogether unfavorable in a person not too far advanced in years and who is willing to let up in his work, take recreation in the open air, and change his mental activities somewhat.

The treatment consists in attention to the diet, lessening but not dropping the proteids, decreasing the arterial tension by the nitrites (and nitroglycerin), and giving sodium iodide in small doses continuously. It is not wise to remove these persons from business entirely; they should continue in active life in moderation. They should be especially warned against emotional excitement, anger, passion, or sympathy. Mental deterioration is often very rapid when, as is sometimes necessary, such cases drop all mental work. In anginal and abdominal attacks morphine is indicated, but only as long as relief is required; for a few days at most. Amyl nitrite often acts favorably. The bromides, if used, should be employed in small doses, 15 to 20 grains three times a day. The heart, again, may be the seat of myocardial changes, and strychnine and digitalis may be required, but should be used with caution.

DISCUSSION.

Dr. Williams said that he had recently seen a case very similar to one of those described by *Dr. Fisher*. The patient was a man, 70 years of age, employed in one of the Government departments. The first attack came when he was in Utah at a high altitude, about a year ago, and he had had four or five since. He was a moderate eater of nitrogenous food and a careful liver, not given to the abuse of alcohol, and the nature of his business caused him to spend much of his time in the open air. The blood-pressure was only about 150 at the time of the attacks. There was no considerable degree of arteriosclerosis, so far as could be ascertained, except perhaps of the temporals. He advised the man to restrict his diet, especially as to nitrogenous food, cut down the purins, etc., and, as a result, he was now in very good health and had had no attack recently. From this it seems reasonable to conclude that even a moderate eater can sometimes be benefited by cutting down the diet, although of course the dieting should

² Barker: American Journal of the Medical Sciences, May 29, 1910,

not be carried too far. It should be remembered that the aged require only a small intake of nitrogenous food. The body at this time of life is not in any condition to handle large quantities of proteid material. He also gave this patient iodides. He did not advocate the use of the nitrites in these cases; thinking it a better plan to attack the imperfect metabolism, the basic cause of the trouble. Recently Parker, as against Russell, has severely criticised the view that intermittent claudication, or spasm of the smaller arteries, is the cause of these attacks. He believed that sclerotic changes play an important part in their production, and that the mechanism is rather an œdema than a spasmodic anæmia.

Dr. Osborne said that he could not agree with *Dr. Williams* as to the effects of the nitrites in these cases. Those who treat many cases of heart and circulatory disturbance cannot endorse the laboratory results, which goes to show that the reduction of blood-pressure caused by the nitrites is but temporary. As a result of clinical experience he was convinced that a lasting depression of arterial pressure can be brought about by the frequent administration of the nitrites, even to a point where the use of a vasoconstrictor may be required. In treating these cases the physician should endeavor to keep the arterial pressure at the point where the patient is the most comfortable. According to his experience, sodium iodide gives the best results in 0.05 or 0.10 Gm. doses three or four times a day. In his experience the absolute withholding of meat in the case of patients over 50 years of age, who had been accustomed to a full meat diet, was generally inadvisable.

Dr. Fisher said that the exact manner in which the attacks are brought about is, of course, a mooted question. The temporary duration of some of them, however, and the fact that the patients often recover without any permanent effects, cannot be explained by any permanent change of caliber of the cerebral vessels, such as would be likely to result from thrombosis. The character of the attacks would seem to demand an explanation involving a temporary cause.

A CASE OF RECURRENT ABSCESS FORMATION, DUE TO STREPTOCOCCUS INFECTION, SUCCESSFULLY TREATED BY AUTOGENOUS VACCINES.*

By GEORGE G. ROSS, M.D.,
PHILADELPHIA.

THE case herewith reported offers some interesting points in diagnosis and treatment, and will serve as a text for some remarks on vaccine therapy. It is one of staphylococcus bacteræmia with furunculosis, subperiosteal abscess of the scalp, and necrosis of bones of the skull, treated by operation and autogenous vaccine. The history is as follows: Mr. O. C., aged fifty years, lawyer, was admitted to the German Hospital December 14, 1909. He was the patient of your President, Dr. J. C. Wilson, who asked me to see Mr. C. with him in relation to a large subperiosteal collection in the left parietal region of the skull. There was nothing of note in his family history except that several children died of tuberculosis. He himself had been healthy, never having had a serious illness until August, 1909, while living at Ocean City, N. J. His first symptoms were a series of furuncles covering a period of two weeks.

* Read by title before the Eleventh Annual Meeting of the American Therapeutic Society, held in Washington, D. C., May 5, 6 and 7, 1910.

He went to bed September 9th, and for five weeks was treated for typhoid fever. During the latter part of his illness he suffered from a severe cystitis. He returned to his occupation early in November. In a few days he developed a severe pain in the left side of his head, above the ear and behind the position of the parietal eminence. The pain, at first dull, but continuous, progressively grew worse. About the middle of November he was compelled to return to bed, and had remained there until his admission to the hospital. The patient looked anæmic and thin, showing the effects of his long illness. Blood examination showed hæmoglobin, 80 per cent.; erythrocytes, 4,230,000; leucocytes, 10,500; with 58 per cent. of polymorphonuclear neutrophils. The urine showed a faint trace of albumin, but was otherwise negative. Over the left parietal eminence was a large fluctuating fluid tumor evidently containing pus. This was incised, and the pus evacuated. From the pus, *staphylococcus aureus* was recovered in pure culture. A blood culture also showed the presence of this organism in the blood. A vaccine was made from the organism found in the abscess and four doses were given at intervals of four days. The first dose was 50,000,000, the second, 100,000,000, and the last two 150,000,000 each. There was no constitutional reaction, but the local condition improved with marked rapidity. The discharge quickly changed from pus to a clear, thick serum with an orange tinge. He began at once to improve generally; regained his appetite, gained in weight, and expressed himself as feeling decidedly better. As the bone at the bottom of the abscess was denuded and dead, he was advised to return home and report in a month, so that a sequestrum could have time to form.

He reported again on February 3, 1910, and it was then decided to remove the dead bone. The pus from the sinus still showed *staphylococcus aureus*. His blood-count showed leucocytes, 6,350; polynuclears, 57 per cent. A horse-shoe incision was made through the scalp, and the area of necrosis exposed. A sequestrum about as large as a dollar was removed and the rough edges of the bone smoothed off with a bone-cutting forceps. A large mass of exuberant granulations was curetted away from the dura mater. The dura was tightly adherent to the skull, so that the area of infection was sharply localized. The wound was sewed up and drainage supplied by a rubber tube coming out of the original incision. The patient was again given three injections of autogenous vaccine at four days' interval, each dose being 150,000,000. He continued to improve, regained weight, and left for home in about three weeks, in better health, he said, than he had been for years.

It is open to serious doubt whether this patient was really suffering from typhoid fever during the period of the continued fever which was so diagnosed. While furunculosis is by no means uncommon during typhoid, especially during the period of exhaustion in the later stages, it is noteworthy that the furunculosis in this case antedated the so-called typhoid by about two weeks; also that the man did not get well, but continued to suffer from an infection with *staphylococcus aureus*, the organism being found in the blood at the end of four months' continuous illness of alternating severity. While we cannot positively affirm that the initial illness was not typhoid fever, the history

and course warrant the belief that the case was one of chronic bacteraemia. Such cases do not constitute a new observation, but it appears timely to call attention to their occurrence and to advocate the taking of a blood-culture, if not in all cases, at least in those which display atypical and long-continued symptoms, especially if pyogenic lesions be present. Particular interest, however, attaches to the rapidity of recovery under the administration of an autogenous vaccine.

Sir William Gowers has remarked that "you cannot gain any real knowledge that has not far wider application than is at first apparent." No better example of the truth of this statement can be found than in the application of vaccine therapy to the cure of disease. Twenty-five years ago, when Metchnikoff was making his initial observations of phagocytosis, and formulating his well-known ideas of immunity to bacterial invasion, who could have foretold that the factors which govern to a large extent the exercise of the phagocytic action would later be laid bare and seized upon as an aid in ridding our patients from infections? Much patient labor and many workers deserve credit for this advance, but it is beyond my scope to trace the development of the subject, ending at the present time with Wright, who deserves the greatest credit for having introduced a method of utilizing the principles upon a practical basis.

The successful use of vaccines depends upon a comprehension of the method of action and intelligent administration. It is important to realize that a vaccine is not an antitoxin and that it has no bactericidal or bacteriolytic action; in other words, it offers no passive immunity to the patient, such as is conferred by antitetanic or antidiphtheritic sera. For its effects it depends upon the reaction of the body against the organisms injected. This presupposes that the individual still has resisting power and that a certain amount of time may safely elapse before its effects may be expected. These requirements remove from the scope of this treatment those severe fulminating infectious states in which the patient is overwhelmed by the toxins and dies in a few hours, or at the most within several days. In such cases there is neither ability to react nor time for reaction to occur. It is clear that the more severe the infection, the smaller should be the dose and the greater the caution that should be exercised. This is the exact opposite of the rule in applying curative sera which directly antagonize bacteria or their products. The reason for the caution is twofold: first, we must be careful not to add to a severe toxæmia the last straw that breaks the camel's back in our dose of killed bacteria; second, there is danger, in theory, at least, of producing too great reaction and phagocytic destruction of bacteria with liberation of a lethal dose of endotoxins. In general infections where the struggle between bodily resistance and invading bacteria is more evenly balanced there is a definite field for this form of treatment. Apparently the bodily reaction is not sufficiently provoked by certain smouldering infections to enable the patient to throw off the disease. Under the stimulus of added infectious products, in the form of a vaccine, a sharp reaction occurs, which is sufficient to annihilate the invaders. Such cases have been reported by Barr, Bell and Douglas, who were the first to apply this form

of treatment in a case of streptococcic endocarditis, in 1907, by Thompson and Hoobler in this country, and by Pfeiffer and Da Costa working in connection with the German Hospital, one of the most interesting of their cases being that which I am reporting herewith. The use of vaccines in these subacute general infections constitutes the most important recent advance in this field. To secure the best results the vaccine should be autogenous, a fact which is not strange to the bacteriologist who realizes the number of strains which may be encountered in the same group of bacteria the response to which on the part of the body is highly specific. The best results are also to be expected in pyogenic infections, where nature constantly demonstrates the importance of phagocytosis by a leucocytosis and collection of pus cells. Infections with the streptococcus and pyogenic staphylococci have given the most constantly favorable results, and especially is this true of localized infections, such as carbuncle, furunculosis, acne vulgaris, persistent sinuses, etc., in which the utility of this method of treatment is beyond question.

In addition to these typically pyogenic infections, other infectious conditions have been treated with success. Gonorrhœal arthritis and pneumococcic, typhoidal and colon bacillus infections have on occasions yielded in a remarkable manner to vaccine treatment. It is as yet too early to define definitely the entire field and limits of vaccines. The important point is that they have established a footing and will remain as an addition to curative measures. They are distinctly an addition, an adjunct, and have not come to replace or supersede any well-tried forms of treatment. Neither the usual medical or surgical measures can be discontinued in favor of the vaccine. Without such measures vaccine treatment will often fail. With them it will contribute to a more rapid, sure and complete recovery from many infectious conditions.

There is one aspect of this question to which attention has recently been directed and which is so well exemplified by this case as to be worthy of comment. This is the stimulating effect upon general metabolism which has sometimes followed vaccine treatment. The general improvement which sometimes occurs in debilitated conditions following a boil, carbuncle or other infective condition has been remarked even by the laity. It is not improbable that the response to the artificial and controllable infection represented by a bacterial vaccine may transcend the simple object aimed at and promote the general functions and well-being. Begg¹ reports a case of staphylococcus aureus infection of the leg in which during treatment by autogenous vaccine there was observed a great amelioration of a chronic bronchial catarrh which had been attended by a constant cough and profuse expectoration. He remarks that he was struck by the improvement in the general health of his patients under treatment and that they seemed to experience an increased sense of well-being as immunization advanced. Other observers have reported marked improvement in the general health of tuberculous cases after receiving vaccine treatment for an intercurrent pyogenic infection. It is possible, however, that here the effect was due rather to a heightened resistance to secondary pyogenic infection of

¹ British Medical Journal, January 22, 1910.

the lungs, which plays such an important part in the later stages of tuberculosis, than to its general stimulating action. Bruce² has reported a number of cases of extreme neurasthenia and even mania, which he believed to be due to failure of nutrition, which he treated with polyvalent streptococcus vaccines. Of 8 chronic cases 2 entirely recovered. He was impressed with the apparent stimulation of nutrition, as 8 out of the 11 cases markedly increased in weight. In the case here reported there was a marked and rapid gain in weight and strength, following a long period of debility. I am not unmindful of the great psychic effect which a new and spectacular form of treatment may have had on many of the cases reported, though in this case there seemed to be but little opportunity for the factor. Neither do I forget the caution contained in the remark of a wise clinician regarding a new remedy, that "we must hasten to use this drug while it is still curing," but I believe I have seen not only in this but also in other cases unmistakable evidences of this beneficial general effect, and it seems to me worthy the consideration of a society devoted to therapeutics.

**THE ETIOLOGY OF ALCOHOLIC INEBRIETY, WITH SPECIAL REFERENCE
TO ITS TRUE STATUS AND TREATMENT FROM A
MEDICAL POINT OF VIEW.***

By L. D. MASON, M.D.,

BROOKLYN, N. Y.

A RECENT German writer places alcoholism at the head of the list of folk-diseases (Volkskrankheiten)—alcoholism, tuberculosis, syphilis—being often also the direct or indirect cause of the two latter. In fact, all these may be said to bear a causative relation to each other in some degree, alcoholism being the most prominent factor. The importance of alcoholism as a direct underlying cause of individual, social and national degeneracy cannot be overestimated. It has no limitations. "No pent-up Utica contracts its powers, but the whole boundless continent" and humanity at large is its field of operation. Eliminate alcoholism and its baneful influence from the physical, mental and moral life of individuals, from social conditions and the state, and a social and political millenium would dawn. No subject is more important than the consideration of the underlying causes of alcoholic inebriety and the means and methods by which we may eliminate these causes—not so much the evils of alcohol, which form the cut and dried subject of the temperance lecturer or writer for popular journals, dealing principally with the results of these causes, but rather what these causes are, why they exist at all, and by what process they can be removed.

Year before last a World's Temperance Congress was held in Stockholm, Sweden, under government auspices, medical and lay delegates were sent

² British Medical Journal, February 19, 1910.

* Read at the Semi-annual Meeting of the American Medical Society for the Study of Alcohol and Other Narcotics, Philadelphia, April 6 and 7, 1910.

from the United States, at which were discussed the great sanitary, social, and economic questions of the day. The medical profession was ably represented, and the subject of temperance and the evils of alcohol was discussed from a medical and sanitary standpoint. Last year a similar congress of the same body was held in London, England, and other conventions will be arranged for in the future. All this means that the importance of the subject of alcoholic inebriety has taken hold of the governments of the world, and that the nations are fighting for national life.

The etiology of alcoholic inebriety, especially with reference to the true status and treatment of the inebriate from a medical standpoint, is the subject before us. The term inebriate we use in a restricted sense. We do not apply it to the drinking man or even to the drunkard. It is a conventional term, in its etymological sense not definite, but by common use and acceptance in scientific circles employed to express a condition in which volition is absent, or at least practically so, and in which the person cannot control himself in the use of alcoholic liquors.

In testing the disease theory of inebriety, we apply the same methods as we do in determining and classifying other diseases, and we assert that these tests applied to inebriety will place it at once in the nosological list.

Why do men drink alcoholic liquors or use narcotics? What is the origin of the drink craze or inebriety? Is the condition symptomatic of a latent condition or conditions? If so, what is the underlying cause? For there must be a cause. Is it moral, mental or physical—for inebriety has been attributed to all of these—and which is right? Shall we send for the family lawyer, or pastor, or doctor? Shall law, or religion, or medicine deal with the case? Shall we reform the inebriate in the prison or the mission, or cure him in the asylum. Is the inebriate responsible or irresponsible? Are we dealing with a vice or a disease, or both? Is it a case for legal and moral discipline and punitive measures, or for medical treatment? These questions have been asked and theories practised from time immemorial. All cannot be right; all cannot be wrong.

This assembly of medical experts and the thirty-odd papers presented at this meeting, each on some phase of the subject of inebriety, answer my question. It would have been both futile and foolish to attempt to secure your attention and interest under any other theory than that inebriety is a disease, and demands the same care that pertains to other diseases of a similar character, by the individual practitioner and by the State.

What has brought about this change? The keynote was started by Dr. Benjamin Rush, of your own city, in the past century; then by Dr. Turner, of Wilton, Conn., and then through a host of prominent names, shining lights in the medical world,—Drs. Mussey, N. S. Davis, the elder Mason, Quimby, Parker, Didama, Parish. Time would fail me to mention these and others who, through faith in the belief that inebriety was a disease, passed through all the experience that attends the fate of a reformer. And all these died in faith, not having yet received the promise. They have labored and we have entered into their labors, and, Fellow Members of this Society and Friends, this Society,

and this and similar meetings of professional men, as well as the universal acceptance through the medical profession at home and abroad of the theory they promulgated, constitute the fruitage of the tree they planted, whose leaves are for the healing of the nations. We stand with uncovered heads in the presence of the memory of these men, who have wrought out for us something even greater than civil liberty, whose persistency and faith has and will rescue thousands of their fellowmen from the disease of inebriety, who could not have been cured in any other way or under any other theory. The celebrated Pinel, of France, opened the door of the dungeon of the lunatic, and brought him from the dark, the filth, the straw and chains of Bedlam, and the obloquy of devil possession, into the air, sunlight and reasonable liberty. So, because of the efforts of these men, the inebriate began to lift up his head and see that the day of his redemption was nigh. Instead of the prison, the asylum, instead of punitive measures,—humane consideration, and the best of all possible chances to “enter the kingdom of Heaven,” and to secure in this life in a measure some comprehension of what that means.

Etiology of Alcoholic Inebriety.—I believe that the uncontrollable use of alcoholic liquors is in itself symptomatic, and based on a latent pathologic condition. For example, diabetes may be traced to irritation of the floor of the fourth ventricle. In this disease uncontrollable thirst is a prominent symptom. But the excessive thirst and water craving is not the disease; it is the result of the disease, and is symptomatic. We may cover up and hold in abeyance a symptom or symptoms of disease, treat the disease tentatively, so to speak, but this is not rational or reasonable practice. We must remove the cause. All inebriates are not so from a similar cause. There may be some points in common, but each individual case has its special etiology, idiosyncrasy, stage of development, complicating and contributive conditions. The same rule applies here as in other diseases. As with dispositions and faces, no two are alike. Commercial quackery fails to recognize this fact, and treats all cases alike, on the principal that if we all take a pinch of snuff we shall all sneeze.

The etiology of alcoholism has received too little consideration from the medical profession, and is too often attributed to mistaken conditions. Hence wrong conclusions, faulty diagnosis, prognosis, treatment, and failure to recognize the disease theory.

There are one or more causes in a single case. These causes are predisposing or exciting, direct or indirect. Some maintain that there is always a latent predisposition, inherited or acquired, which the alcohol habit simply develops or calls forth. Professor Dr. Gaupp, of Tübingen, believes that recourse to narcotics represents one of the most striking symptoms of a neurasthenic tendency. He says: “So long as there is a call for these narcotics must our race be stamped as degenerate.” If this be the case, there are a large number of latent drunkards who will sooner or later meet their inevitable fate. This pessimistic view, which has much of truth in it, we would not advocate outside of scientific circles; we should hold up the optimistic view along the lines of general treatment, suggestion and psychotherapy, whenever practicable. This

fact, however, should regulate the therapeutic use of alcohol,—if, indeed, it should be given at all in any case where the family tendency or individual idiosyncrasy would precipitate habit and subsequent disease.

In regard to the treatment also the fact should receive especial attention, that *each case should be dealt with on its own merits*, and the past as well as the present condition of the inebriate be considered. Every case should have a full and exhaustive record as to the physical, mental and moral condition. The condition of every inebriate will call for special, individual attention and treatment. In a practice of over thirty years at the Inebriates' Home for Kings County, Ft. Hamilton, N. Y., several thousand inebriates passed under my care and personal inspection, and were individually dealt with by myself and assistants as diseased mentally and physically.

Inebriety may be acquired or developed as the result of habit, due to social customs, delusions and false ideas, faulty education, or positive ignorance. Let us consider a few of the popular fallacies that lead to the use of alcoholic beverages and its consequent evils.

1. The so-called moderate or temperate use of alcoholic beverages as a table habit, or as treating on the "American plan," as a social custom, or the secret habit of tippling, all of which will develop in time into chronic alcoholism with its attendant evils.

2. The false and pernicious idea that the so-called moderate use of alcoholic beverages is essential to literary successes. This fallacious doctrine, recently issued from the chair of psychology of one of our leading universities, has done incalculable harm.

3. Another old-fashioned delusion is to teach the young man or woman to drink like a gentleman or lady, in order that later they will not depart from it (lamentably true in one sense) and will not abuse the privilege,—a wrong conclusion; the test of experience disproves this. Alcohol is no respecter of persons any more than arsenic, strychnine, or carbolic acid.

4. The use of alcoholic beverages as a hereditary privilege,—another old-fashioned fallacy. The days of the winecellar and the sideboard as a sign of gentility and social standing, hospitality and good fellowship, which finds its counterpart in the lower ranks in the pocket whiskey flasks offered on all occasions as an evidence of friendship, have passed.

5. Alcohol as an appetizer or table tonic. The inevitable cocktail or cordial to stimulate or rather to irritate the worn-out stomach of the alcoholic habitué. Alcohol is neither a stomachic tonic nor appetizer. It dehydrates the tissues and eventually produces gastrointestinal irritation and chronic disease.

6. Alcohol as a food,—exploited as the product of laboratory and physiological experiment, and cause of much agitation in medical and especially temperance circles. Alcohol has been proven not to fulfill the definition of a food in its most important and essential particulars. The supposed value, if any, of alcohol in the treatment of disease is certainly not as a food, and its advocates, confessedly few, will have to look elsewhere for its asserted advantages.

These are a few of the principal fallacies which lead to the use of alcohol, as a habit, and finally to disease.

The alcoholic habit may be *innocently acquired* by the use of *patent medicines containing alcohol*, of which fact the person is in ignorance. These contain a greater or less percentage of alcohol, in some as high as 44 per cent. The United States liquor-tax laws now demand that the percentage of alcohol be printed on all patent medicine labels. The action of *Collier's Weekly*, of the New York Medical Society, of the American Medical Association, through its journal, as well as of this Society, through its official organ, *The Journal of Inebriety*, has done much to expose these frauds.

Dietetic conditions are receiving special attention in modern medicine as the cause of the alcohol habit, and of autointoxication of intestinal origin. The laboratory work and clinical experience of Drs. Kellogg, of Battle Creek, Mich.; Kress, of Washington, D. C., and Benton, of Chester, W. Va., fully confirm this view. *Environment*, climatic conditions; dark, unhealthy tenements; poor and insufficient food, also have their causative influence. Read Jacob Ries's book, "How the Other Half Live," and then wonder why men and women keep sober at all under these conditions. *Occupation*, unsanitary conditions, long hours, continued exposure,—these are likewise of etiologic importance. To these social causes may be added all *emotional factors* that produce unhappiness, mental distress in the individual experience or family relations.

The *climacteric period* in male or female was pointed out by the late Dr. Joseph Parrish as the critical period for the cause or cure of habit, a waning or weakening of desire occurring at this time, in which the habit is left off if not too far advanced. The taste for stimulants and tobacco is lost, the period being at or about sixty years in the male. This fact might help to give a little optimism in the way of prognosis. On the other hand, we have seen incipient dementia ushered in by a lapse into inebriety and moral indiscretions.

There is an *inebriate diathesis* in the same sense that there is a tubercular diathesis, or an inherited or constitutional tendency to other diseases. Some are aware of it, some are not. There are those who spend their lives fighting this tendency,—whose sole ambition is to live a sober life, and die a sober death. There are thousands who are conceived and born under alcoholic influences, and enter the world with the "hallmark" of alcohol stamped upon them, live and move in an alcoholic environment, and die from the effects of alcohol. They are ignorant, non-resistant, and incapable. They are in the current of a diathesis, a peculiar constitutional susceptibility, and are swept over the falls of physical, mental and moral ruin. Some have been caught in this current and have gotten out, or been pulled out; but these are few. Does the tendency leave them? Is the inebriate diathesis ever wiped out? It is said that there is no good Indian but a dead Indian; shall we be regarded as being extremely pessimistic when we say that there is no cured inebriate but a dead inebriate, in the sense that none are free from the danger of a relapse, of falling again into the swift current of the diathesis that leads to the falls, the Niagara of destruction?

Let this be written over every alcoholic diathesis: "Touch not, taste not, handle not." Here is an axiomatic truth. No one, with this diathesis or constitutional tendency either inherited or acquired, should taste alcohol either as a medicine, a beverage, or in the church sacraments. I would say to my fellow physicians, "Is your object to cure, or the reverse,—to save life or to destroy it? Then never prescribe alcohol at all." Do not give it to any person who has the history of the alcoholic diathesis, inherited or acquired,—the constitutional susceptibility to alcoholic inebriety,—do not place him in the current. An experience of nearly thirty-five years as physician to an asylum for the treatment of inebriety and other forms of narcosis has brought to my knowledge, not infrequently, cases where the person having such diathesis, inherited or acquired, had been placed in the current through the medium of an ill-advised and unnecessary alcoholic prescription. And these are only surface cases. There are thousands which never come to the surface. We never hear of them again. They are sucked down in the undercurrents, lost in the alcoholic flood, through alcohol either self-prescribed, or given in a medical prescription for a neurasthenic condition or for one demanding an anæsthetic for painful conditions or an euthanasia for mental disquiet.

It is a law of experimental physiology, and one which is confirmed by clinical experience, that a drug that will stimulate above the normal the vasomotor nervous system and consequently the vascular system will be followed by a corresponding depression, or subnormal condition, and this oscillation between the supernormal and subnormal continues until finally the normal is attained upon cessation of the cause of disturbance. No drug is more active in producing this condition of alternate excitation and depression, so rapidly, markedly and consciously to the person, as alcohol. Under these conditions, the means being readily accessible, the person naturally desires to shorten the periods of depression, being experimentally conscious of the fact that it is within his power to do so, and takes another dose of alcohol, and repeats it, meeting every stage of discomfort or depression in this way. The drunkard carries, as it were, a self-winding clock to which the key is whiskey, and so ten, twenty, thirty, forty drinks a day will mark these periods of discomfort or depression. The habitual drunkard is thus kept "comfortably full" under the narcotic influence of alcohol,—except when he cannot get it; and, when he does not, he suffers for the time being from a prolonged stage of depression. In order that the inebriate shall recover from his alcoholic habit, he will have to fight this stage of depression, of greater or less duration and frequency, and possibly overcome the habit by such assistance as may be given him. Then the intervals of recurrence will become longer and the periods of depression shorter until finally he reaches a normal condition, or one where by an intelligent exercise of his restored will power he can resist the temptation to take any alcoholic beverage either habitually or periodically. Thus, whatever be the cause behind the drink craving, we must recognize in addition to this the physiological action of the alcohol itself in producing periods of vasomotor excitement and depression, and so consider this also an etiological factor in the alcohol habit and the eventual and chronic disorder.

It would be a very simple method of curing alcoholism or "reforming" the drunkard, as it is called, were only the "leaving off" of the use of alcohol to accomplish it. But unfortunately other conditions are present which either antedate the alcoholic habit and are the cause of it, or are due to the effects of the alcohol itself; or, again, we may have to deal with both conditions, as is usually the case. In either case the desire for alcohol will not necessarily disappear on the removal of the alcohol, or will only disappear temporarily, and therefore be the cause of frequent relapses. These conditions of which the habitual use of alcohol is largely symptomatic must be treated and removed before we can cure the confirmed inebriate. The removal of the alcohol is, however, the first step toward the cure,—a most essential and immediately beneficial part of the treatment. We cannot impress too much on the would-be reformer that while we may admit that there are purely psychic cases that are "reformed" without the aid of medicine, yet many of these cases relapse because behind them were unrecognized diseased conditions that were not removed, and therefore they were not cases amenable to treatment by psychotherapy or suggestion. All sorts of methods for the cure of the inebriate are practised by reformers, and no doubt in a certain class meet with temporary and sometimes permanent success. But many cases relapse, and fail to respond to the emotional treatment. Shall we regard such treatment as final, and refuse to investigate further, or shall we place our failures in the hands of an intelligent physician, and ask him to find the hidden cause of physical, mental or moral degeneracy? From any point of view we are driven to this conclusion: That the starting point of the treatment of the inebriate is the knowledge of the underlying cause or causes of his inebriety. Therefore all so-called "cures" or more properly called "reformations" outside of the legitimate practice of medicine are not cures in the medical use of that term, but simply cases in which a bad habit has been reformed, and are confined solely to psychic cases or that class amenable to suggestion only. Such methods are of value and have their place, but should in no wise be allowed to substitute the practice of regular medicine in cases in which they are not appropriate. Such a substitution would be unjust to the great class of inebriates at large. As we have said, we refer especially to the various "movements" along reformatory lines as practised under the auspices of certain religious denominations, which we heartily endorse in their proper relations, but not in an indiscriminate sense as opposed to common sense and medical science. Outside of these so-called "movements," we most positively denounce all forms of quackery practised in the so-called "cures," just as we denounce all other forms of quackery and for the same reasons.

Aside from social conditions and fallacies based on ignorance, let me call attention to the more scientific phases of the subject. We have:—

1. *The inherited or congenital form*, due to a defective ancestry or progenitor,—an "inebriate diathesis," a decided predisposition or inherited tendency. All degenerative tendencies (not necessarily alcoholic) in an immediate ancestor establish or favor such a predisposition. What is the average family history? Is it as a rule normal or abnormal? Who shall decide what

is the correct physical, mental, moral standard which we may call normal? It is only relative or comparative at the best. Are we not a defective generation? We may well ask, Is the tendency of the race toward further degeneracy or regeneracy? Whether we take the pessimistic or optimistic view, the fact nevertheless remains. The nations are fighting for national life, not along the line of principle, but that of social economy and sanitary science and medical teaching, and the worst foe to national life, efficiency and integrity, is alcohol and its degenerating tendencies, inherited or acquired.

2. *The pathologic form* includes all forms of traumatism, such as injury to the skull, cerebrospinal axis, etc. Personal mutilation of any kind, so repulsive to some natures, produces not only physical reflex, but also mental or moral disturbance. Diseases of a depressing or painful character, especially syphilis in its later stages, various painful neuroses demanding anæsthesia or narcotism, exhaustion or neurasthenic conditions,—these are also included. The innate craving for alcohol or other narcotics is symptomatic and an indication of an abnormal state. A perfectly healthy person has no such craving or desire; let me repeat this fact as an axiomatic assertion.

3. *The Psychic Form*.—This is hysteroid in character,—the result of social disquiet, unhappy family relations, business reverses or mental or emotional causes demanding a mental sedation or state of euthanasia or temporary forgetfulness under narcotic influence. This condition is often amenable to the influence of psychotherapy or mental suggestion, change of environment, occupation, etc.

4. *Dipsomania*.—A monomania,—a true psychosis or insanity. The etiology is imperfectly understood. The condition is periodic, cyclonic in its advent. The prominent symptom is the drinking of alcoholic liquors to complete coma or alcoholic satisfaction, followed by intervals of sobriety and total abstinence of varying duration. In the present state of medical science it is regarded as incurable. At least, in true forms the prognosis is unsatisfactory.

Alcohol as an Anæsthetic.—This is the one characteristic that recommends alcohol to the laity; it is usually accidentally or experimentally discovered. Alcohol will relieve pain or gastric distress, and is not only a nerve but a mental sedative. It will relieve high nerve tension and neurasthenia, not as a stimulant, but owing to its narcotic effect. It produces an euthanasia or soothing effect in melancholia, drowns sorrow and mental distress, and gives a temporary oblivion. It is popularly used to produce sleep. Alcohol engenders a temporary anæsthetic or analgesic effect. It was the anæsthetic of the older surgeons. Even modern surgery reports cases where major amputations were performed on persons who had received injury while in a state of alcoholic coma, without the aid of any other anæsthetic. My experience as a hospital surgeon also confirms this. There is a pathological anæsthenia which occurs in cases of chronic alcoholism, in which certain parts of the body are insensitive to the prick of a needle or even a moderately deep incision. This is not an uncommon condition and should be looked for in all cases of chronic alcoholism.

There is a popular idea that a man is not drunk if he does not stagger and retains his senses to a reasonable degree. As far as alcoholic intoxication

is concerned, no matter how moderate the quantity, the average drinker is always drunk in his tissues and in his physiological processes. • This can be proven by instruments of precision, the slight disturbances not being noticeable to ordinary observation, but being readily detectable by tests applied to the perceptive faculties, etc.

Alcohol as a popular medicine and universal panacea represents a deeply rooted fallacy almost amounting to a superstition. The alcohol bottle in the closet is a veritable household god, and the whiskey flask is reserved for all emergencies. If there is one characteristic of alcohol above any other that makes it of all etiological factors the principal cause of degeneracy, it is its effect as an anæsthetic, producing a sense of relaxation, inhibition and temporary relief from physical pain or mental distress.

The doctor as an etiological factor, so often quoted, too often without grounds, is made the excuse of the average drinker. I trust there is no physician who knowingly would act in such a rôle. He may be popular with a certain class, but the time has come when no physician can so act without confessing his ignorance of the true status of medical science in the use of alcoholic beverages. The period is rapidly approaching when careless off-hand advice as to the use of alcoholic liquors will no longer prevail, but, if at all prescribed, alcohol will be given with the same caution that pertains to other drugs. The consensus of opinion both at home and abroad is that alcohol is being rapidly eliminated from intelligent medical practice. This is especially true of the rising and modern practitioner. The advice of the doctor or his practice will soon no longer be the stock in trade of the chronic seeker for an excuse as to his bibulous habits.

Briefly then, the causes of alcoholic inebriety are: 1. Congenital or hereditary. 2. Acquired or developed under supposedly normal conditions. 3. Environment, social conditions, climate, poverty, unhealthy surroundings, improper and insufficient food, unhealthy tenements, various employments, long hours, unsanitary conditions, etc. 4. Pathologic. 5. Psychic. 6. Dip-somania, not clearly understood, but classified among the neuroses.

Whatever the cause may be we can safely say the average inebriate is not so by choice, nor does he remain so by choice. The popular notion is that it is simply a matter of will power. It may be so in a certain class of cases of the psychic form, but not in the confirmed inebriate, often organically diseased, who needs all the aid medicine can give. I do not believe men as a rule become inebriates by choice. Even if, as it is said, a man "deliberately drinks himself to death," we would hesitate to believe the statement. If so, it is simply a form of slow suicide with all the false reasons that accompany a disordered or unbalanced mind. Why do men continue to drink, or remain incurable, and why cannot they "leave off"? Because inebriety is always complicated and associated with other disorders, functional and organic. These severely handicap the man. In fact, the advanced alcoholic is hopelessly involved with disease. The chronic alcoholic is a walking pathological museum, a subject of general fatty and fibroid changes, especially the former. He may stop drinking, but he is practically incurable under any treatment.

Alcoholism may cause disease, be the result of it, or be associated with it as a complicating or contributory factor. Thus, alcoholic neuritis is caused by alcohol, protracted by it, and relieved by it temporarily, the alcohol acting as a quasi-remedy. The tendency to drink alcohol is often the symptom of a diseased condition. It is very important to differentiate in this particular, and if possible remove the cause of the condition of which the alcoholic habit is merely a symptom.

Finally, the correct knowledge and significance of the etiology of alcoholic inebriety point out and determine the *true line of treatment*. The only basis on which we can act is that inebriety is a disease, and if so there must be a cause for the disease, of which the inebriety is in a large measure symptomatic, and we must treat the disease, not the symptom. To simply remove the drink craze temporarily is not to get at the real cause of the trouble. If these facts be true, then the *confirmed* inebriate is no more responsible for his acts than the *confirmed* lunatic. I am now speaking of the organically diseased inebriate, —the man suffering from neural, cerebral and glandular changes.

But, you may say, are not cases of inebriety cured *outside* of the limits of legitimate medicine? Yes, but these cases are not seriously organically diseased as the result of the habit or associated conditions. Purely psychic cases can be *reformed* without any treatment at all by merely leaving off the alcohol. Hence the success of commercial quackery in a certain percentage of cases, and also, through its indiscriminate, non-selective method, its failure in many cases. I believe a large percentage of selective cases could be cured and are cured by suggestion and psychotherapy, but these cases are in the hands of experienced physicians who take only selective cases. Our argument is that to get the best average results we must classify our patients and let this proper classification regulate their disposition. *We must place the treatment of the inebriate on a scientific medical basis.* Then we will begin to reap success, because we will understand our cases and be familiar with the etiological factor in each. Under the present irregular methods we aim at about 40 per cent. of cures in non-selective cases. The rate from a selective list would run much higher. A large proportion of inebriates who belong to the psychic class are amenable to such treatment. We can only account for the success of commercial quackery and all kinds of treatment, regular and irregular, on this supposition. I believe that when we give the case of the inebriate the same advantages as to diagnosis and treatment that obtain in other diseases, such as early recognition of the etiological factor or factors, prompt, appropriate treatment, and complete control of the case, we shall have a large proportion of cures. I do not hesitate to say concerning the inebriate that he has not had half a chance, and that we physicians have not had half a chance as to his treatment.

As the average confirmed inebriate is irresponsible, we need appropriate legislation. The well-to-do inebriate in the numerous private asylums has especial and sufficient care. The pauper inebriate should be the ward of the state, not as a criminal or moral delinquent, but as suffering from mental and physical disease.

Prophylactic or preventive measures may act along the line of educational influences. It is a source of gratification that alcohol as a drug, and also from its etiological, physiological, pathological and clinical aspects, has been taken up as part of the curriculum of our leading medical schools. As this is a matter in which education plays so important a part, the public should be duly instructed by specially qualified physicians or trained speakers, as to the physical evils of the alcohol habit. In a large measure through the work and influence of the late Mrs. Mary H. Hunt, of Boston, this has been done in the public schools of America; her system has also been adopted in the public schools of Great Britain on the endorsement and recommendation of the English medical profession. In this country some 20,000,000 of children are instructed in the dangers attending the use of alcohol and other narcotics, as taught in the text-books. The National Temperance Society, the Temperance Press in its periodical issues and publications, and the various temperance societies, are dealing with the so-called temperance question from a purely scientific standpoint, and their platform lecturers gladly welcome and give out scientific matter from medical sources largely. The Scientific Temperance Federation of Boston prints in its issues a world-wide, up-to-date review of the medical status of the questions relating to alcohol, and from the physician's standpoint a résumé or synopsis of the substance of leading medical journals of the day on this topic. We need hardly refer to the medical side of the question as considered in *The Journal of Inebriety*, the organ of this Society; *The British Journal of Inebriety*, and the medical press here and in Europe.

As a sign of the times and the interest that has been taken by our government in the work of this Society along the line of educational effort, it is worthy of note, and a great source of inspiration and encouragement, that the proceedings of our Society and the papers read at its semi-annual meeting held at Washington, D. C., March 17, 18 and 19, 1909, were ordered to be printed as a Senate Document by the Sixty-first Congress at its first session. The publication is known as Document No. 48, the title "The Alcoholic Problem and its Practical Relation to Life."

In medical practice based on a correct knowledge of etiological conditions and clinical experience with the evils of alcohol as a drug, its use is now being eliminated,—just the reverse of what was a few years since. For a physician not to be up to the present medical attitude of the leaders of the medical profession at home or abroad shows that he is not a conscientious student of the signs of the times, is too prejudiced to seek information, or is still in the Rip Van Winkle sleep of fifty years ago.

All this great change of professional opinion and practice may be attributed to this Society, which will soon celebrate its fortieth anniversary, and to the labors of a few physicians who for an average lifetime have endeavored and finally succeeded in convincing the bulk of the medical profession at home and abroad that inebriety is a disease, dependent on well-known etiological factors (which we have endeavored to specify), and have confirmed the attitude taken by that physician of your own city, over one hundred years ago, Dr. Benjamin Rush, that alcoholism was a disease having its own etiology,

pathology, and clinical history, and that it demanded special treatment and hospitals and asylums as other diseases. I feel honored to stand here to-day and assert that the leading men in the medical profession at home and abroad, by their precept and in their practice, and by tongue and pen, endorse fully the opinion of Dr. Rush, one of the most notable, far-seeing, clear-headed and patriotic physicians, not only of the past, but of any age, and, if there should be, as has been proposed, a monument erected to his memory, I would suggest,—and I am sure this Society would endorse my suggestion,—that upon the tablet be inscribed these words: “Dr. Benjamin Rush, Physician—Philanthropist—Patriot,—The First Physician in the World to Point Out Definitely the Etiology of Alcoholic Inebriety and Determine its Proper Treatment as a Disease.”

PREPARATORY TREATMENT OF SURGICAL PATIENTS.

By A. M. CRISPIN, M.D.,
NEW YORK CITY.

THERE has been an unfortunate tendency during recent years for the majority of surgeons to relegate to oblivion those older studies of preantiseptic days, which taught that careful preparation of patients is essential before surgical interference is attempted. The latest researches form a logical continuation to this pioneer work on a more extensive scale, and I am thoroughly convinced that this will continue to be as important a factor in the progress of surgery as the aseptic treatment has been.

Among the general features the importance of which is revealed by systematic observation is the recognition of those deep constitutional disturbances which often accompany surgical diseases, and failure to recognize which will surely presage a calamitous ending. It is a remarkable and little appreciated fact that small things turn the scale between life and death,—things which, although they appear trivial, are nevertheless, by the severe processes of modern investigation, invested with an importance second to none. Such is the pre-operative preparation of patients.

Commonly we are wont to be satisfied with mere cursory preparation, extending at the most through twenty-four hours, trusting blindly in our perfect asepsis and excellent technic, and frequently overlooking factors which are no less valuable and influential in the final outcome. Take, for instance, alcoholism, which has only to be mentioned to suggest that dreaded post-operative sequel—delirium tremens; diabetes, syphilis, malaria—all conditions having a profound influence on the recuperative processes of the organism, and which have to be reckoned with before undertaking any surgical procedure. To subject a patient to the strain incidental to a major operation without previously correcting or eliminating these conditions is to court disaster. Of course, the emergency operations, the so-called “imperative” operations, where the nature of the case is such that we have to interfere immediately to save life, are not included. But in those cases where we have time at our disposal, the

patient ought to undergo a thorough preparation, and be placed at or as near the physiological par as is possible. Of the systemic diseases which are liable to interfere with the final result, diabetes is generally admitted to be foremost. Not only an established diabetes, but even a transitory glycosuria, is to be feared. Danger is incurred from any form of traumatism in such a case; even the anæsthetic itself is a source of grave peril.

Syphilis always holds in reserve some surprise for the surgeon. When least suspected it is liable to reappear, interfering with the recuperative processes. It affects every tissue of the body, and has a peculiar way all its own of simulating other diseases. The social rank of the individual should have no weight in our opinions, for the disease may be present in chaste and saintly personages as well as in those of opposite nature. Lues, aside from the hereditary and insontium types, may coexist and be associated with any other acute or chronic disease, and this without the knowledge of its victim.

There is no doubt but that malaria is capable of influencing the course of surgical convalescence. I have repeatedly seen it delay the healing of wounds, even in patients who did not show any evidences of malaria at the time of operation, and whose blood was negative as to the plasmodium.

The condition of the myocardium is of greater importance than the existence of a valvular lesion, and much attention should be given to its functional capacity. Closely allied to the heart is the state of the blood, and the anæmia, even when not of the pernicious or grave type, should be given consideration and improved. When the blood-making organs have lost their power of forming red blood-corpuscles, the examination showing nucleated or polychromatophilic cells and a blood-count less than 2,000,000, the prognosis is extremely grave; to operate in such cases is almost useless. The value of leucocytosis in inflammatory or suppurative conditions is still in doubt; the consensus of opinion seems to be that taken alone it is not sufficient, but that, taken in connection with the other symptoms, the total and differential count is suggestive. The percentage of hæmoglobin is very important; when it falls below thirty any surgical operation undertaken is very serious, and, if it falls to twenty, death can confidently be expected.

Besides these general affections, there are others of a functional or unknown nature, which interfere markedly with the healing of wounds. Among them renal insufficiency holds first place as a contraindication to operative interference. The best way to judge of the functional efficiency of the kidneys is to note the quantity of urine voided in the twenty-four hours, as this offers the most accurate information, not only as to the kidneys, but concerning the system in general. If less than a certain proportion of urinary solids is passed in the twenty-four hours, it is dangerous to operate.

The liver reflects the general condition of the system and it is advantageous to estimate its function, for hepatic insufficiency is closely united to oliguria and anuria, and this independently of lesions of the organ itself. Jaundice is a contraindication to operation.

Another condition which influences very materially the results of surgical operations is the nitrogenous equilibrium of the patient. The evil effect of underfeeding and overwork is nowhere better demonstrated than in surgery; they lower the resistance of the tissues, and thereby favor microbic infection. Operations performed in those who are suffering from a physiological bankruptcy, whose nitrogenous output is greater than their intake, in the nature of things cannot be as successful as in the well-fed and rested.

Autointoxication is a factor of no mean importance, and has to be eliminated,—especially that which results from intestinal putrefaction, for even in its milder forms it predisposes to sapræmia, septicæmia and even pyæmia. This is true not only of operations directly on the bowels, but holds good throughout the organism, and more especially with reference to the liver and biliary passages.

There can be no doubt of the influence of the mind in causing the physical symptoms of shock. This need not astonish us when we reflect on the powerful effect the mind has over bodily function. Emotion, especially fear or joy, of itself and without bodily hurt of any kind may be followed by the gravest form of shock resulting in immediate death, even without coexisting heart disease.

Many cases have been reported as having died from fright, and such accidents have happened before any surgical interference had been instituted. Fear has an etiological value which is not generally recognized. No matter how apprehensive the patient is before operation, we are inclined to feel secure in the belief that when he is under the anæsthetic we have conquered his fear, when in fact we have only overcome his resistance. The idea of being cut is so terrifying to some patients that it alters the heart-action and respiration, relaxes the bowels and skin, and causes profuse diuresis.

It is not too venturesome to prophesy that surgery will in the near future take cognizance of those individual peculiarities, and endeavor more fully to control all the eventualities arising from them. Through the utilization of physiological facts and a deeper insight into the great rôle played by the adrenal system, the time will come when patients will be prepared for operation by being immunized with some vaccine virus, and thus subsequent infection and shock be prevented. From all this it follows that to be thorough in our work we must not be satisfied with the customary perfunctory preparation of patient, limited to the carrying of the ordinary methods for securing asepsis and the administration of calomel and salts, but must prepare him by allowing plenty of food and rest, controlling the emunctories, correcting the underlying disturbances, and, in a word, studying the individual organism in its manifold variations and idiosyncrasies.

Authors' Abstracts

REMARKS ON HEXAMETHYLENAMINE, WITH ESPECIAL REFERENCE TO THE ELIMINATION OF THIS SUBSTANCE IN THE SECRETIONS FROM THE MIDDLE EAR AND NASAL SINUSES.

Application to the Treatment of Diseases of these Organs, with Illustrative Cases.*

By WILFRED M. BARTON, M.D.,

Professor of Pharmacology and Therapeutics in the Medical Department of
Georgetown University,

WASHINGTON, D. C.

IN an oral communication Dr. Barton gave an account of some recent work on this subject. He had made a preliminary report on the subject in an article which had been published in the *Journal of the American Medical Association*, March 12, 1910.

The first part of the report dealt with generalities concerning the drug hexamethylenamine.

Historical.—Hexamethylenamine was first made by Butlerow, in 1860. Nicolaier, in Germany and Bardet, in France, simultaneously worked out certain clinical aspects of the drug. The names of Casper, Elliott, Loebish, Orlowsky, Kelly and Wilcox are intimately associated with its earliest use, at the time which might be called the era of genitourinary application of the drug. It was first recommended by Nicolaier to prevent deposit of urates. Casper soon extended its use to ammoniacal fermentation of urine, and, as a result of the combined researches of Nicolaier, Casper and others, it was widely employed in cystitis, pyelitis and infections generally of the urinary tract. In a few years its use was extended to the treatment of bacteriuria in typhoid fever, to prevent cystitis and insure against propagation of the disease by the urine. Soon afterward it was employed as a prophylactic of scarlatinal nephritis and as a prophylactic in operations upon the urinary tract (Casper). The era of extension of the use of hexamethylenamine beyond diseases of the genitourinary tract began in 1908 when Crowe, of Johns Hopkins University, showed that the drug is eliminated in the bile and pancreatic secretion and demonstrated experimentally and clinically its applicability to the treatment of infections of those tracts. This important discovery of Crowe was followed the next year by one equally important by the same investigator, that the drug is eliminated in the cerebrospinal fluid and that it is of great use particularly as a prophylactic against infections of the meningeal tract.

Chemistry.—Hexamethylenamine is a condensation product obtained by

* Oral communication before the Eleventh Annual Meeting of the American Therapeutic Society, held in Washington, D. C., May 5, 6 and 7, 1910.

passing dry ammonia gas into formaldehyde. Reaction takes place thus: $6\text{CH}_2\text{O} + 4\text{NH}_3 = (\text{CH}_2)_6\text{N}_4 + 6\text{H}_2\text{O}$. On heating the drug with H_2SO_4 and Fe_2Cl_6 formaldehyde is liberated. The substance is very soluble in water, and its solution gives an orange-yellow precipitate with bromine. The reaction for the detection of hexamethylenamine depends upon the liberation of formaldehyde from it by means of H_2SO_4 . A drop of milk is added to the suspected liquid, to supply casein, and the reagent (100 c.c. H_2SO_4 , 96 per cent. + 2 gtt. 3 per cent. sol. Fe_2Cl_6) is poured into the tube. At the line of juncture an amethyst color appears (Crowe).

Physiological Action.—The drug may be detected in the urine in ten or fifteen minutes after its internal administration. Half a gramme will be eliminated in about half a day. Animals are very tolerant. Ten grammes in a rabbit produced albuminuria, and 15 grammes in a dog produced hæmaturia. Fleig (1907) showed by onconometric observations on the kidney that primary vasoconstriction, followed by vasodilation, is brought about in the kidney.

Bacteriological Power.—Orlowsky, of St. Petersburg, found that hexamethylenamine inhibits the growth of cholera vibrio, staphylococcus and Siberian pest bacillus, but that its action in this respect is less than that of mercuric chloride or phenol. Also that albuminous substances interfere with the development of the antiseptics, and, finally, that fermentative organisms of urine are killed at body temperature. Nicolaier found that it acted on culture media only at body temperature, and concluded that the antiseptic effects are due to liberation of formaldehyde. This opinion has been opposed (Götlz), and the question is not yet settled, though the opponents of Nicolaier's theory appear to have the best of the argument.

Toxicology.—The drug is not poisonous, but in man some undesirable effects are known to have occurred. Beardsley's article in the *Therapeutic Gazette* is quite complete on this subject. Hæmaturia is the most common complication, and the occurrence of this symptom does not appear to always coincide with the size of the dose. Albuminuria is a rare symptom, and the same is true of skin eruptions. Gastrointestinal disturbance (pain, diarrhoea) has also been noted.

The second portion of Dr. Barton's communication related to his own investigations upon the treatment of suppurative otitis media and sinusitis by hexamethylenamine. He had had 7 cases under his observation. The first was the one in which he had first demonstrated that the drug appears in the discharges from the middle ear. Dr. Mead Moore, of the Episcopal Hospital, Washington, D. C., soon afterward obtained a positive reaction from a patient with suppurating sinusitis to whom the drug was administered. The details of the observations were not given by Dr. Barton, since they were to appear in a separate communication. The summary of conclusions deduced from his experiences was as follows:—

1. Hexamethylenamine is eliminated by the mucous membrane of the middle ear and accessory nasal sinuses.

2. The drug is of service in acute suppurating otitis media, all the cases being apparently rapidly cured. The chronic cases were ameliorated, no absolute cure having been noted in a limited number of cases.

3. Upon *a priori* grounds it may be assumed that hexamethylenamine may prove to be a valuable prophylactic in those diseases commonly attended by otitis media; perhaps also as a prophylactic used prior to surgical operation upon the middle ear or mastoid and the sinuses of the nose.

DISCUSSION.

Dr. S. L. Dawes, Albany, N. Y., said it seemed to him that no drug which had been introduced in the last decade gave greater hopes for the future than hexamethylenamine. If we have found a drug which will serve as an effective antiseptic in otitis media, a great advance has been made. Hexamethylenamine possesses the valuable property of acting as an antiseptic during its elimination from the body. After its administration we find it in the cerebrospinal fluid, bile and urine, and in the secretions of the middle ear. The fact that it does much good through its elimination by the kidneys in phosphaturia and certain bladder affections is generally recognized. The exact manner in which it produces its beneficial effects is not known in all cases, but it must have some definite bactericidal power, and this suggests that it may prove of service in many diseases in which it has not yet been tried.

Dr. James A. Gannon, Washington, D. C., said he was among the first to whom *Dr. Barton* described his valuable discovery with regard to the usefulness of hexamethylenamine in middle-ear troubles, and at *Dr. Barton's* suggestion he decided to give it a trial in his clinic on Diseases of Children at Georgetown Hospital. He had employed the drug in some 15 or 20 cases, and had had no disappointments. He briefly described the results obtained from its use, and referred particularly to a case of chronic otitis media of one year's duration in a child 3½ years old. This patient had been treated in the usual way with irrigations, tonics and hygienic management, but had failed to improve. She was under weight, had a fetid discharge from the right ear, and tenderness around the ear. Boric acid irrigations, *t. i. d.*, and hexamethylenamine, 1½ grains, four times a day, were ordered. In two days the odor of the discharge had disappeared, and in four days the discharge ceased entirely; so that the irrigations were discontinued, while the hexamethylenamine was gradually reduced and finally discontinued. This child has had no discharge for a month, and has improved rapidly in health. *Dr. Gannon* had used hexamethylenamine in earache, especially during influenza, with prompt disappearance of the pain. He considered the drug not only an excellent curative agent, but a good prophylactic.

Dr. Osborne said that *Dr. Barton's* experience tended still further to substantiate the conclusion which had already been pretty generally reached, namely, that hexamethylenamine is a valuable addition to our materia medica. How long can it be used without danger of harmful effects? He has had a patient with locomotor ataxia under treatment for a year and a half. He had suffered from phosphaturia for from six to twelve months before he came under observation. *Dr. Osborne* tried every measure he could think of to relieve this condition, but without success until he used hexamethylenamine, and from that time the phosphaturia has given no trouble. Although the patient has now been taking the remedy for a year and a half, thus far no unfavorable effects have been noted. At first he gave him 0.50 Gm. four times a day, and then gradually reduced the administration to once a day. This did not hold the phosphaturia in check, however, and he was obliged again to give the remedy oftener.

Dr. Fisher reported a similar case in which he had used the drug for four years. He had seen no bad effects from its prolonged use.

Dr. Stewart asked what would happen if formaldehyde should be set free in the blood as a result of the decomposition of the hexamethylenamine.

Dr. Barnes said that *Dr. Barton's* discovery had already proved of great service in hospital and dispensary work. Clinically the effects of the drug were all that could be desired. He reported a case of chronic suppuration of the middle ear of two years' standing. As a result of the administration of this remedy the secretion first became more fluid, and then lost its odor, and yesterday there was no sign whatever of a discharge. He had given hexamethylenamine with beneficial results to all of a family of four children with chronic ear disease, one of whom had been treated surgically. Even in this last case, although the temperature ran high, no pus appeared, its formation having apparently been prevented by the remedy. It is remarkable how the drug controls the discharge in these cases. Its beneficial effects open up a field of usefulness in the ear complications of grippe, scarlet fever, measles and other diseases. In these infectious diseases hexamethylenamine should be given for its double prophylactic action, the prevention of kidney, as well as middle ear, complications.

Dr. Leech spoke of the great value of hexamethylenamine in the prevention of the kidney complications of scarlet fever and other infectious diseases. He employed it regularly in most of his cases, and he had also used it successfully in gonorrhœa and during pregnancy.

Dr. Morris said that we hesitate to use the bacillus vulgaricus in certain forms of suppuration for fear that it may become the dominant species. If, however, we could control its growth by the use of hexamethylenamine, we should open up a valuable field of usefulness of both of these agents. The drug acts favorably in scarlet fever by inhibiting the colon bacillus nephritis, thus ending kidney complications. It would be interesting to know whether in the same way it destroys the bacteria which cause nephritis in some other diseases.

Dr. Barton said that, as to the fate of any formaldehyde which might be liberated in the blood through the decomposition of the remedy, he believed it would enter into combination with the proteid molecule, for which it has a marked affinity. He had succeeded in proving that formaldehyde is sometimes present in the aural discharge of patients suffering from chronic suppuration of the middle ear who have been taking hexamethylenamine.

Dr. Morris said that it was not so important to know how the drug destroys bacteria as it is to be sure that it actually kills them.

THE RANGE OF ACTIVITY AND THE UNTOWARD EFFECTS OF CERTAIN SPINAL ANALGESICS; BASED ON TWO THOUSAND ADMINISTRATIONS.*

By W. WAYNE BABCOCK, A.M., M.D.,

Professor of Surgery and Clinical Surgery in Temple University,
PHILADELPHIA.

IN the two thousand cases were included all kinds of operations in all parts of the body. This kind of anæsthesia should properly be called nerve-root anæsthesia, rather than spinal, as it was the nerve-roots which were affected. Its safety depended largely on the height in the spine of the nerve-roots which it was necessary to narcotize for any given operation. The higher up they were, the greater the danger. The delicate thing was to have the solution employed sufficiently light to affect the sensory nerves without involving the

* Abstract of paper read at the Eleventh Annual Meeting of the American Therapeutic Society, held in Washington, D. C., May 5, 6 and 7, 1910.

motor ones. It could be made lighter by the addition of 10 per cent. of alcohol to 4 per cent. of solution. By regulating the position of the patient's body it was possible to arrest the anæsthetic at any point of the spine desired. The speaker considered the doses used by Jonnesco unnecessarily large, and said that the same results could be obtained from half the doses he employed. In all operations in the upper part of the body it was essential to be prepared to perform artificial respiration at any moment. In the cases embraced in the report various anæsthetic agents were employed.

DISCUSSION.

Dr. Osborne asked what solutions he had found the most satisfactory for spinal anæsthesia.

Dr. Barnes inquired whether it would not be possible to inject at some point of the spinal canal a solution having the same specific gravity as the cerebrospinal fluid, so as to produce anæsthesia at a definite point; for example, in the region of the appendix.

Dr. Morris inquired whether the injected fluid would not eventually pass along the whole length of the spinal canal, in accordance with the law of the diffusion of liquids, whatever might be the specific gravity of the anæsthetizing solution. He had recently had a case, an osteoma of the frontal bone, in which spinal anæsthesia was used, and he found it necessary to keep the patient alive by artificial respiration for nearly an hour. During this time the outcome was a matter of great anxiety to him, but the patient finally recovered.

Dr. Barton asked whether the injection of a 10-per-cent. solution of alcohol might not have the effect of producing nerve degeneration, as alcohol was known to be a protoplasmic poison.

Dr. Babcock, in reply, explained that the alcohol content of the solution is reduced about one-half in strength through admixture with cerebrospinal fluid (withdrawn by the injecting syringe) before it is thrown into the spinal canal. No nerve degeneration has as yet been noted, although it has been carefully looked for. Such degeneration as has been noted within the last five years has invariably occurred in patients who have been previously etherized. He cited a case of this kind, a child upon whom he had operated for tuberculosis of the knee-joint. Several weeks afterward meningitis developed. Nerve degeneration, particularly abducens palsy, occasionally followed the use of almost all of the synthetic alkaloids. Why the sixth nerve should be affected oftener than others he did not know. It pursued a longer course within the skull than any other nerve, and it was possible that this might have something to do with the explanation. The rate of diffusion of the injected fluid is very slow. The drug is decomposed by the cerebrospinal fluid, which still further limits its field of activity. The less alcohol used, the more rapid is this decomposition; hence as the fluid diffuses it decomposes, and the anæsthetic effect can be limited very largely to any desired portion of the spinal canal. Out of the 2000 cases in which he had used spinal anæsthesia he had met with only from six to ten where he had found it necessary to employ artificial respiration. One was an operation for the removal of the lower jaw. The dose recommended by Jonnesco had been given. Suddenly the patient stopped breathing, became pulseless, and was apparently dead. At the end of twenty-five minutes, however, during which time artificial respiration was administered, he gasped, and then soon recovered completely. Another was a case of shock. The patient was pulseless when he was put on the table, but *Dr. Babcock* was not informed of this fact by his assistant. He proceeded to give the intraspinal injection, and soon found it necessary to begin artificial respiration in order to keep the patient breathing. After ten minutes he went on with the operation, but the patient's respiration again ceased, and he had to give artificial respiration for six hours, at the end of which time the patient died. It seemed to him, however, that

death was not due in this case primarily to spinal anæsthesia, for the reason that the effect of the injections lasts at most only two hours. Subsequently, though, he had a similar case, and since then he has had a third. He did not believe, however, that the final result in any of these cases was due to the anæsthetic. In reply to Dr. Barnes's question, he explained that at the present time spinal anæsthesia cannot be successfully employed for the purpose of anæsthetizing a certain small portion of the body. The cerebrospinal fluid itself varies in specific gravity, and it is impossible to estimate this in advance or to so place the injected fluid that only a small area, as, for instance, the region of the appendix, is made anæsthetic. In conclusion, Dr. Babcock discussed the relative value of the agents which are ordinarily employed at the present time for the production of intraspinal anæsthesia.

On motion of *Dr. Osborne* a vote of thanks was tendered Dr. Babcock.

Cyclopædia of Current literature

ALCOHOL AND NEPHRITIS.

From a clinical study of 460 cases of chronic alcoholism the writer concludes that alcohol when taken daily, as it is by chronic inebriates, dipsomaniacs or drinkers, is not an irritant to the kidneys. When nephritis occurs in a chronic alcoholic, it is probably due to some other concomitant toxic agent, and not to alcohol. Overeating, acute intoxicants, exposure to colds, autointoxications, infections either manifest or latent, and some metabolic disorders as yet unknown, are the real causative factors of nephritis.

Alcohol when taken by drinkers as food or stimulant, such as seen in chronic alcoholism, is a diuretic. Those tissues which eliminate alcohol are least affected by it. This applies to the lungs and especially to the kidneys. While an intoxicant, alcohol is also a detoxicant, ridding the body of various deleterious catabolic products.

The comparative integrity of the kidneys in alcoholics may be due to the fact that the renal cells contain very few lipoids and lecithins and that therefore they are not at all acted on by the narcotic molecule. J. F. Hultgen (*Journal of the American Medical Association*, July 23, 1910).

APPENDICITIS, CONGESTION OF THE LOWER LOBE OF THE RIGHT LUNG AS AN EARLY SYMPTOM IN.

The writer calls attention to a moderate impairment of percussion resonance and a slight roughness of the vesicular murmur which he has noticed at the base of the right chest posteriorly in some patients who have subsequently developed decided evidences of appendicitis, and in whom the pulmonary congestion or atelectasis has then disappeared. These manifestations are entirely distinct from the pleuritic and pneumonic inflammations which may arise from septic processes during the late stages of appendicitis. In view of the fact that rigidity of a limited area of the anterior abdominal wall is characteristic of appendicitis, a similar local muscular immobility may be assumed to occur in the superior abdominal wall, *i.e.*, the diaphragm. In this spasmodic rest other respiratory muscles on the right side may join. The expansion of lung tissue being thus imperfect, local pulmonary congestion is the result. Hence the presence of the signs above mentioned, and the occasional similarity between the early symptoms of appendicitis and right-side pneumonia which has been

appreciated for years by both surgeons and physicians. J. B. Roberts (*Annals of Surgery*, June, 1910).

BACTERINS AND TUBERCULINS IN MIXED SUPPURATIVE BONE AND JOINT DISEASE.

Inoculations by bacterins and tuberculins, either alternately or separately depending upon the condition of the patient, furnish a valuable accessory therapeutic measure in the routine anti-tuberculous hygienic and surgical treatment of mixed suppurative bone and joint disease. Bacterins, especially tuberculins, are more potent agents for evil than for good, unless competently administered. Carefully employed, cases do better with than without bacterins; their detention in the hospital is materially shortened and complications, if they occur, are fewer and less severe. The therapy is superfluous in mild cases where simple operation and time will effect cure; nor is it applicable to neglected cases with prolonged suppuration, characterized by bacteraemia, grave sapraemia and amyloid disease. So long as the temperature fluctuates above 100°, autogenous bacterins, obtained by culturing and reculturing the suppuration found to contain variable bacteria from time to time, are administered. Tuberculin inoculations are begun when the temperature falls to 100° or preferably lower.

Better results have attended the process of active immunization, where, just as in tuberculin therapy pure and simple, the treatment has been commenced with relatively small bacterial inoculations, progressively increased to the therapeutic limit, rather than by recourse to large dosage, thereby establishing immunity in the former case and in the latter avoiding anaphylaxis.

Tuberculin alone in the earliest stage

of acute tuberculosis has not proved of noteworthy value, probably due to the fact that the disease progresses too rapidly for the production of immunity, a result which necessarily consumes months. Studious observations of the clinical symptomatology have invariably sufficed to control the inoculations, the opsonic index as a guide proving not only impractical but frequently erroneous. De Forest Willard and B. A. Thomas (*Annals of Surgery*, June, 1910).

COCCYGDYNIA, TREATMENT OF.

The ordinary treatment of this condition by a rubber cushion to sit on, or even by a resection, being highly unsatisfactory, the author offers a plan that has proven almost uniformly successful in his hands. The coccyx is grasped between the forefinger in the vagina and the thumb on the outside, and is moved backward and forward. The soft parts are also moved about on the bone. The manipulation is begun very lightly and gradually increased in force as the patient becomes less sensitive. Usually two or three treatments at intervals of two or three days suffice for a cure. L. W. Ely (*Journal of the American Medical Association*, March 19, 1910).

CONSTIPATION, SURGERY IN.

Developmental anomalies are at the bottom of many cases of chronic constipation. Posture is frequently a result rather than a cause of this ptosis. Congenital potential factors are present in many individuals, which become active through accident, such as traumatism, rapid and badly-cared-for childbirth, habitual constipation, operative adhesions, etc. Neurasthenia often dates from childhood or puberty; operation, therefore, in the adult may give only partial relief because of this constitu-

tional asthenia. Cases in which there is a recent acquirement of the active factor give the best surgical results.

Various suspension operations are valuable in properly selected cases but disappointing in the remainder. At best these fixation points may be unstable. Radical excision of obstructive portions of the large bowel may give the highest percentage of operative mortality, but is likely to give the best ultimate results in the survivors. In no field of surgery should haste be made slower than in this. It is not a field for the novice.

The most important factor in the diagnosis is a detailed clinical history pointing accurately to obstructive possibilities. A well-taken skiagraph is of the greatest confirmatory value. J. G. Clark (*Journal of the American Medical Association*, August 6, 1910).

FIXATION, THE REACTION OF, IN THE DIAGNOSIS OF HEREDITARY SYPHILIS.

The reaction of fixation was studied by the authors in 76 children, including 72 in whom hereditary syphilis was either known to be present or suspected; 64 of the cases were followed subsequently, many of them for several years. The results noted would seem to indicate that the reaction of fixation is of considerable diagnostic value in this class of cases.

In hereditary syphilis appearing at an early stage, the proportion of cases yielding a positive reaction when the disease is in full evolution (87.5 per cent.) is very similar to that recorded in active cases of acquired syphilis. The intensity of the reaction does not seem always to correspond with the severity of infection. As is the case in adults, the reaction may be rendered negative by mercurial treatment (in 2 cases out of 5).

In cases where the active stage of the disease has been passed, the time elapsed

since the last symptoms observed appears to exert a paramount influence on the response to the reaction of fixation. In such cases, and also in hereditary syphilis appearing late, the proportion of negative results (80 per cent.) is comparable with that observed in old, sluggish cases of syphilis in the adult. A negative reaction, therefore, especially in children past a certain age, does not completely eliminate syphilis.

In the non-syphilitic children of the series the reaction was uniformly negative. Scarlet fever did not seem to be a source of error, since, in four cases which had either had scarlet fever previously or were at the time in the periods of eruption or of desquamation, the results were negative.

In children presenting symptoms of a suspicious nature, investigation of the serum served to confirm the syphilitic origin of various disturbances, such as Little's disease, ozæna and interstitial keratitis. Certain few negative reactions which were obtained in the presence of phenomena in reality syphilitic may be accounted for by the fact that these phenomena were remnants of a former active process now at a standstill. Finally, it was found possible by means of the reaction of fixation to isolate, among the dystrophies of infancy and childhood, certain forms dependent upon inherited syphilis and of which the nature could not have been established upon clinical grounds. The reaction, however, is not always easy of interpretation; generally only incompletely positive results are obtained. Demanche and Détré (*Société de biologie; Bulletin médical*, June 15, 1910).

GRAVES'S DISEASE, TREATMENT OF.

The author recommends the use of intravenous injections of iodine and arsenic in the treatment of exophthalmic goiter.

He refers in this connection to recent researches which have demonstrated the affinity of diseased organs, and of the thyroid gland in particular, for these agents. He administers repeated intravenous injections of 2 cubic centimeters (32 minims) of the following solution: Atoxyl, 1 gramme (16 grains); iodide of sodium, 4 grammes (64 grains); distilled water, 20 cubic centimeters (5 drams). This treatment, he claims, brings about cessation of the tremor, profuse sweating, diarrhoea, thyroid enlargement and tachycardia. It is without influence, however, on the exophthalmos. F. Mendel (*Therapie der Gegenwart; Revue de thérapeutique médico-chirurgicale*, June 15, 1910).

HÆMORRHOIDS, PROCTITIS AS A CAUSE OF.

Having noted that hæmorrhoids very frequently coexist with catarrhal inflammation of the rectum, the author is of the opinion that proctitis often bears a direct causative relation to hæmorrhoids and that it should therefore receive a large share of attention in the treatment. Cases of acute catarrhal proctitis showed that as the inflammation subsided the oedematous hæmorrhoids also became reduced and gradually disappeared. According to the author, the hæmorrhoid secondary to proctitis results from a gradual hypertrophy of the mucous membrane due to its inflamed condition, this being followed by a separation of the mucous membrane and the sliding down of a small portion of it into the grasp of the sphincter muscles. This small outgrowth becomes filled by serous exudate from the vessels lying within its submucous tissue, which are themselves thereby gradually lifted away from the muscular layer. The parts being constantly in a state of hyperæmia, a well-

organized hypertrophic mass at length results, which is recognized as a hæmorrhoid.

The primary etiological factor in the causation of hæmorrhoids from this point of view being most probably a digestive disturbance, gastric or intestinal, with products of fermentation acting as irritants to the mucosa, the treatment of this form of hæmorrhoids should consist of arresting fermentation and overacidity with intestinal antiseptics and the alkalies, relieving the liver by restricting the use of carbohydrates, prohibiting the use of alcohol, tobacco, coffee and tea, guarding against overindulgence in rich food, and encouraging exercise or rest as indicated.

Where the proctitis present in association with hæmorrhoids is of an acute catarrhal type, the rectum should be washed out each day for a week with a gallon or more of water at 110° F.; or with any of the mild solutions used for the nose and throat. Each irrigation should last not less than fifteen minutes. In the subacute and chronic forms of proctitis, after using the irrigations for a week, a weak solution of one of the silver salts may be injected every second or third day; or an application of some combination of the following remedies may be made, either in the form of a suppository, or as an ointment, by means of the hard-rubber pile-pipe; ichthyol and iodoform, for their alterative and stimulating action; tannic acid, adrenalin and hamamelis, for their astringency; and belladonna or stramonium, as sedatives. M. L. Bodkin (*Medical Record*, June 25, 1910).

HOOKWORM DISEASE.

The writer describes the symptoms and causes of hookworm disease and its treatment by thymol. There is hardly any

other drug that is so nearly a specific for a particular disease as this one, but there are cases, and those sometimes the most severe, in which it has failed. If improperly administered, it may pass through the intestine in hard masses and lose its efficiency. This may be the case when it is given in pulverized form in ordinary capsules and it has also occurred sometimes when administered in mucilage of acacia, and idiosyncrasy has been invoked to account for them. Thymol is also not without danger if certain necessary precautions are neglected and its toxic effects are somewhat similar to those of phenol. The administration should be in such a way as not to permit the drug to be absorbed in solution, but in such a manner as to allow it to pass through the intestines, reaching every part where the parasite may be found. The writer does not believe in an idiosyncrasy. The theoretical possibilities of its non-action can be enumerated as, first, a peculiar mucous or catarrhal condition of the intestine protecting the parasite; second, a viscous or colloidal state of the intestinal fluids preventing perfect contact of crystals; third, irritation of small erosions of the bowel causing irritation and too rapid propulsion of the drug through the duct; fourth, the gastric or upper intestinal menstrium may be of a nature to dissolve the drug, causing absorption before it can reach the parasite; fifth, thymol may be administered in such form so that it makes hard masses or something of the sort that fail to reach the parasite; sixth, in hookworm disease there is generally present extreme pot-belly, general debility and enteroposis. These conditions cause delay in the passage of the drug through the bowel and it is later propelled too rapidly by cathartics and the parasites escape. Of all these reasons the writer considers

the last the most frequent cause, though all may exist in certain cases, either alone or combined.

The danger in the treatment may be overcome to some extent if the patient be kept in bed on the right side after administering thymol, as recommended by Stiles. This permits ready mechanical passage through the pylorus and the burning sensation in the stomach is in a measure avoided. The patient should fast from noon of the day prior to the administration of the thymol; on this day, and the day following, fat of any kind, milk, cream, bacon, etc., should be avoided. Whiskey, beer, wine and oils are absolutely forbidden, as all these can dissolve thymol. Early in the evening of the first day enough Epsom salts should be given for free purgation. Early next day the dose of thymol decided on should be divided in two parts and given an hour apart. It is best administered in cachets triturated with equal parts of milk-sugar, and, before using, the cachet should be well softened in water till of the consistency of a raw oyster. The thymol should be retained from two to five hours and Epsom salts should be then given to flush the bowel and expel the drug.

The amounts of thymol considered safe by the State Board of Health of Florida range from 8 grains or less for infants through 8 to 15 grains for a child from 5 to 10 years, from 15 to 30 grains for a child from 10 to 15 years, from 30 to 45 grains from 15 to 20 years, from 45 to 60 grains from 20 to 60 years, to 45 grains for over 60 years. The age and weight of the child should be considered and the condition of the heart, degree of debility and anæmia should also be reckoned, and where these last conditions prevail small doses are indicated.

After the bowels have been thoroughly moved the last time, the patient can begin to eat sparingly, using the same precautions as before regarding fats, oils, alcohol, etc. After the expulsion of the parasite the treatment is that of general anæmia and debility, and the treatment should be repeated at intervals of from one to two or three weeks till all evidences of the parasite or its eggs have disappeared. In debilitated cases longer intervals may be used. E. E. Lindeman (*Journal of the American Medical Association*, May 28, 1910).

INFANTILE SCURVY, TREATMENT OF.

The treatment of this condition may be termed specific, for the administration of the fruit-juices is as prompt in its effect as quinine in malaria. Orange-juice is the best of the fruit-juices and can be given in doses of one tablespoonful or more every two hours. Rotch recommends the juice of one orange in twenty-four hours; this may be diluted one-third with water. Grape-juice comes next in value, while lemon-juice is considered objectionable because of its great acidity. Most physicians agree that, as infants in whom scurvy develops have generally been taking some proprietary food, condensed milk or sterilized milk, this food should at once be stopped, substituting for it either uncooked milk or milk boiled just before giving it to the child.

That beef-juice has any especial value in these cases seems doubtful. Comby, Still and others give mashed potatoes or potato soup besides the orange-juice, while Baginsky and other German observers report good results from fresh brewers' yeast. Wright has recently advised the administration of sodium lactate. Iron, arsenic and cod-liver oil may be given late in the disease where there

is marked secondary anæmia or exhaustion.

Rest is essential, with as little handling of the child as possible on account of the pain and tenderness present. Fresh air and plenty of water to drink will naturally be of aid. Local applications, such as dilute acetic acid, boric acid, lead-water, etc., are of very questionable value, as they bring about more handling of the affected limbs.

The author recommends as a prophylactic measure the giving of orange-juice to all infants coming under the physician's care after having been upon any of the proprietary foods, or condensed or sterilized milk, for any length of time. Such infants naturally ought also to be placed upon an uncooked milk mixture at once.

In mild cases in which there is an element of doubt, the rapid recovery following the administration of orange-juice will frequently confirm the diagnosis. M. Ostheimer (*New York Medical Journal*, June 25, 1910).

INSOMNIA, ANIMAL EXTRACTS IN THE TREATMENT OF.

Some form of circulatory disturbance is, in general, responsible for the occurrence of insomnia. Hence therapeutic agents which counteract faults in the circulation, whether it be by augmenting or reducing circulatory activity, will prove of marked value in this condition. In cases where the remedies generally used for obtaining such effects cannot be employed or have proven valueless, recourse may be had with advantage, according to the author, to animal preparations, in particular those of the pituitary and thyroid.

Pituitary preparations are especially indicated when the insomnia is accompanied by lowered vascular tension, gen-

eral weakness and a tendency to chilliness, when it is increased by elevation of the head and diminished by the horizontal or reclining posture, and when the patient is quiet. The dried extract, taken regularly an hour or less before retiring and long enough after the evening meal to insure the completion of digestion, in doses ranging from 0.20 to 0.40 gramme (3 to 6 grains), was found by the author to exert a prompt beneficial effect. Since its action, however, is rather fugacious, the patient's system readily becoming accustomed to the remedy, it is best used intermittently. When it is found that the hypnotic effect is being lost, small doses of trional or veronal may be given to sustain it. In cases of irregular insomnia, of inability to sleep before a certain hour of the night, or of premature awakening after a short period of sleep, the use of pituitary extract when necessary often resulted in the patient's obtaining undisturbed rest for the remainder of the night.

In cases where insomnia is associated with high vascular tension, excitement, cerebral congestion, etc., the author recommends the use of hematoethyroidine, which acts as a sedative in doses of 1 to 4 drams. When the condition of excitement accompanying the insomnia persists during the daytime, the remedy should be repeated at those periods of the day when the excitement returns. Whenever there is evidence that cerebral excitement is a contributing factor in the insomnia, the use of a small amount of bromide in conjunction with the agents above mentioned will greatly favor their action. Sardou (*Bulletin général de thérapeutique; Revue de thérapeutique médico-chirurgicale*, May 15, 1910).

INTRAPERITONEAL IMPLANTATION OF THE ROUND LIGAMENTS.

This procedure, the original round ligament suspension of the uterus where the ligaments are left intact (Gilliam's operation), is recommended by the author. Its chief advantages are: 1. Simplicity. 2. Safety. 3. Facility of execution. 4. Efficiency. Many hundreds of cases and a decade of time without, so far as known, a single authenticated case of intestinal strangulation have removed the only reasonable objection to it, whereas its simplicity and facility of execution are conducive to such a conservation of vital energy and freedom from infection that, even allowing for a possible strangulation, it would still have a large balance in its favor. D. Tod Gilliam (*Transactions of the American Medical Association*, June 8, 1910).

MENTHOL AND EUCALYPTOL INJECTIONS IN BRONCHITIS, ETC.

The author has for several years made use of intramuscular injections of menthol and eucalyptol in the treatment of various bronchial and pulmonary conditions. He finds them very effective in bronchitis and gangrene of the lung, as well as in many cases of pulmonary tuberculosis. The formula generally used is as follows: Menthol, 10 grammes; eucalyptol, 20 grammes; castor-oil, 100 grammes. Menthol may also be given alone in the proportion of 1 part to 3 parts of castor-oil. At first injections of 2 cubic centimeters (32 minims) of the solution are given three or four times weekly. Later the strength of the preparation is doubled and the number of injections reduced to two a week. The duration of the treatment naturally

varies in different cases. In general, a course of injections covering four to eight weeks was found to give excellent results. Max Berliner (Berliner klinische Wochenschrift, May 23, 1910).

MIGRAINE, DIAGNOSIS OF.

The diagnosis of migraine for the actual attacks are based by the writer upon the following points: 1, the marked hereditary tendency, direct transmission, and absence of other neuroses in the family; 2, the onset of the affection in most of the patients in childhood; 3, the characteristic visual phenomena preceding the headache, especially temporary hemiopia; 4, headache, generally unilateral; 5, the vomiting which generally accompanies the onset of the headache, and after which the condition of the patient begins to improve; 6, return to the normal in the interval between the attacks, and, 7, the temporary loss of speech and sensory disturbance, which are well-known features of some severe attacks of migraine. J. M. Clarke (British Medical Journal, June 25, 1910).

PANCREATIC DISEASE AND THE CAMMIDGE REACTION.

In a clinical study of this reaction, which consists in obtaining crystals of a certain type in the urine after boiling with hydrochloric acid and treatment with phenylhydrazine hydrochloride, the writers found it positive in three cases of pancreatitis, in two cases of carcinoma of the pancreas, and in a great variety of diseases besides those of the pancreas. Twenty-one cases out of forty-seven were suffering from diseases of the abdominal organs, such as cholecystitis, carcinoma of the stomach, and typhoid fever. In many other instances in which a positive reaction was found, such as varicose

ulcer of the leg, fracture of the leg, burns of the thighs, sarcoma of the inguinal lymph nodes, and valvular heart disease, arteriosclerotic processes were progressing in the patients, and enough disturbance of the circulation in the pancreas might easily have resulted so that the substance which gives the reaction would have been formed and excreted. The authors think it a mistake to interpret every positive Cammidge reaction as indicative of organic disease of the pancreas. J. M. Swan and J. J. Gilbride (New York Medical Journal, April 16, 1910).

PATENCY OF THE DUCTUS ARTERIOSUS, PERSISTENT.

In a study of 400 cases of congenital defects of the heart, the writer found 106 cases of patency of the ductus arteriosus in combination with other cardiac defects. She reports a case in which the patient had, at the age of ten, an attack of measles which first brought to notice a heart already dilated and laboring under mitral incompetency and aortic stenosis. The congenital lesion was still overlooked for many years. Repeated attacks of influenza served to weaken the heart further, and the patient died at the age of twenty-five of rupture of the right ventricle. The autopsy revealed a patent ductus arteriosus, stenosis of the isthmus of the aorta, together with degeneration of the coronaries, myocardium and sinoauricular bundle. Kate C. H. Mead (Transactions of the American Medical Association, June 9, 1910).

PERITONITIS, TREATMENT OF DIFFUSE SUPPURATIVE.

The author describes the treatment of this condition by means of the Fowler posture and colonic irrigation by way of

the cæcum. This method was employed after operation in 2 cases of peritonitis due, respectively, to acute perforating gastric ulcer and to acute gangrenous appendicitis. There had been no attempt on the part of the peritoneum in either case to limit the spread of infection, yet the peritonitis in both disappeared very rapidly under this treatment. The gastric case recovered, while the appendix case died five weeks after operation from abscesses of the liver due to pyelphlebitis of the ileocæcal and portal veins.

An important feature of the method is the employment of a catheter in the cæcum as a means of draining and irrigating the alimentary canal. In both cases the appendix was amputated, the catheter introduced into the colon through the appendix stump and secured by a linen purse-string suture at its base. The same results may be obtained by making a small incision in the anterior wall of the cæcum, introducing the catheter, and securing the cæcum in its position by two catgut sutures passed through the parietal peritoneum and the serous and muscular coats of the intestine. A pint to a pint and a half of salt solution was slowly introduced into the colon every two hours. Each time the hæmostatic forceps that clamped the catheter during the intervals was released and free liquid fæcal evacuations were secured through the catheter. It is of special importance to continue this procedure until free bowel evacuations are secured through the rectum.

Possible objections to this plan of treatment are: the leakage of salt solution and fæces into the peritoneal cavity, complications from a fixed condition of the cæcum, and the danger of a persistent fæcal fistula. The first of these may be guarded against by passing a fine

suture through the serous and muscular coat of the cæcum and through the wall of the catheter, so that the latter cannot be displaced. As for the persistence of a fistula, it is likely that improved technic will render this improbable.

The procedure is advantageous in that large quantities of hot normal salt solution may be rapidly introduced into the circulation immediately after operation, overcoming shock and eliminating toxins. The solution is brought immediately into contact with that portion of the alimentary canal most favorable for absorption. Intestinal paresis from gas retention is avoided, early normal evacuation of the bowels secured, and prompt relief of toxæmia obtained by drainage through the catheter of bacteria-laden fæces. The unpleasant and uncertain features of proctoclysis are eliminated, and predigested foods may be administered in definite quantities. J. E. Allen (Journal of the American Medical Association, March 19, 1910).

PERMEABILITY OF THE KIDNEYS, A METHOD OF ASCERTAINING THE.

The authors describe a simple procedure intended to facilitate the differentiation of albuminuria due to interstitial nephritis from that due to various other causes. The patient, having first been kept in bed for three hours to remove the influence of orthostatism on urinary excretion, is caused to drink 600 grams (20 fluidounces) of Evian water. In a normal individual the water ingested will be passed from the kidneys in its entirety; in patients with renal sclerosis only one-half or even less of the water will pass through. The authors hold that, when patients with Bright's disease show an increase in the amount of urine excreted at night, it is due to the fact that elimination in the

daytime has been retarded, water ingested by day being therefore necessarily eliminated during the night. Vaquez and Cottet (*Tribune médicale; Revue de thérapeutique médico-chirurgicale*, June 15, 1910).

PROSTATIC ENLARGEMENT.

The accepted theories as to the cause of prostatic hypertrophy all fail because each can only apply to a limited number of cases. The prostate and the breast are both controlled by their respective dominant sexual glands, and respond to their influence in a similar way in health and disease. Both organs are subject to a disturbing influence at the climacteric period, which may, and frequently does, result in a hypertrophic change. In such change the microscopical appearances in the two organs show a remarkable resemblance in all essential details. Prostatic hypertrophy, like the mammary involution hypertrophy, occurs only at the climacteric period, whereas there is no known neoplasm which is so strictly limited to an age-period. For these reasons the writer considers prostatic hypertrophy is not due to a chronic inflammation of septic or specific type, nor to a neoplasm; but that it is an involution change similar in character to that with which we are familiar in the mammary gland. F. T. Paul (*Liverpool Medico-Chirurgical Jour.*, July, 1910).

SCARLATINA, PERITONEAL COMPLICATIONS IN.

The authors relate the case of a child of fourteen years in whom an operation for acute appendicitis preceded a mild attack of scarlet fever in the course of which symptoms of acute peritonitis made their appearance. Prompt and complete recovery nevertheless followed. Netter has seen a number of analogous

cases, in all of which recovery likewise took place.

From these observations and others previously published it is evident that symptoms of peritonitis may appear contemporaneously with the cutaneous eruption of scarlatina and go through the same stages of development and decline. Appearances would seem to indicate that the eruption involves the skin and peritoneum at the same time. This form of peritoneal complication seems to occur especially in subjects whose peritoneum has previously been disturbed through appendicitis, enteritis, vulvovaginitis, etc. Touraine and Fenestre (*Société de Pédiatrie de Paris; Bulletin médical*, June 25, 1910).

TRICHINOSIS.

From a clinical study of 52 sporadic cases, the writer considers that there should be no difficulty in determining promptly a correct diagnosis of trichinosis based upon the observation of the following symptoms: 1. Acute onset usually with vomiting and abdominal cramps. 2. A high grade of eosinophilia, invariably present; usually above 30 per cent., and frequently much higher—even above 80 per cent. 3. A high grade of temperature, often reaching 104° or more, and lasting, in lessening degree, for two to six weeks. 4. Puffiness of the eyelids and face, with pains in the eyes occurring in one-fourth of the cases. 5. Dyspnoea and diaphragmatic breathing occurring without cyanosis in about one-fourth of the cases. 6. The generalized muscle pains, cramps, soreness, and prostration, causing sometimes deceptive apparent immobility. 7. The sudden occurrence of symmetrical circumscribed corneal hæmorrhages, in a patient whose blood-vessels are not degenerated, should give rise to a sus-

picion of trichinosis. W. G. Thompson (American Journal Medical Sciences, August, 1910).

TUBERCULOSIS, PHYSICAL SIGNS IN.

In the presence of minute foci of infection it may be difficult to appreciate visual changes in the contour or movement at the apex. Palpation may also fail to disclose a retardation or deficiency of the inspiratory expansion. Even a well-defined variation from the normal percussion boundaries may not be indicative of tubercle deposit. In cases with moderate infection it is not invariably pronounced and at an incipient stage it is usually absent. The accurate determination of resonant borders in early phthisis requires constant practice. Krönig has called attention to a typical condition of the lungs found in some patients with nasal obstruction, in which there is fibrous induration with collapse and shrinkage of the apex due to the inhalation of dust. In spite of the percussion signs suggesting tuberculosis, the latter may be excluded through the clinical course, and the negative bacteriologic findings and tuberculin reactions. Philip describes a means of diagnosis called "tidal percussion," which consists of percussing alternately during expiration and full inspiration in order to determine the limitation of tidal movement and ascertain the degree of functional activity. Recent clinical observations have tended to corroborate the advantages of the method in some instances, but its significance is subject to considerable variation.

Inspection, palpation, and percussion are occasionally of value in cases of recent infection, but in general practice the diagnosis of incipient phthisis will be made in most cases through recourse to auscultation. As a rule, the evidence derived by this method relates to the

detection of fine, adventitious elements more than to definite changes in the pitch, quality, rhythm or intensity of the respiratory sounds. In the author's experience the auscultatory signs of chief importance in early tuberculosis consist of faint, scarcely recognizable clicks at the end of inspiration following a cough, sometimes without pronounced modification of respiratory sounds. They are often obscure if the cough be too violent or the inspiratory effort unduly vigorous. While special significance attaches to unilateral râles at the apex, a not uncommon and sharply localized seat of their occurrence may be under the clavicle, in the axilla, and in the upper interscapular space often opposite the spine of the scapula. The author has occasionally recognized very tiny, semidry clicks in the interscapular region without other physical evidence of the slightest tuberculous involvement. Turban regards the so-called rough breathing as one of the most important changes of the normal breath sounds, distinguishing this from ordinary vesicular respiration in that it appears to be composed of a series of sounds in rapid succession. Roughness of the breath sounds as contrasted with the ordinary smoothness is undoubtedly of some provisional diagnostic value in obscure cases. The significance, however, of the modifications of the normal breath sounds, including feebleness of respiration, appears decidedly inferior to that of localized râles, which are so frequently overlooked. S. G. Bonney (Journal of the American Medical Association, April 2, 1910).

TUBERCULOUS ABSCESSSES OF BONY ORIGIN, TREATMENT OF BY CONSERVATIVE METHODS.

The three cardinal principles to be adopted in the treatment of these abscesses are the following: 1. Maximum

employment of general treatment. 2. Strict and uninterrupted immobilization in the horizontal position over a prolonged period, if the lesion is one of the spine, hip, or knee. 3. Employment of aspirations with or without injection of modifying fluid. Cure takes place in from 95 to 98 per cent. of cases so treated. Aspiration must be performed under strict aseptic precautions. The skin of the patient must be thoroughly prepared, and preferably covered with a sterile towel provided with an aperture through which the aspiration is made. A local anæsthetic of ethyl chloride is usually all that is required. The authors use an all-glass syringe of 10 to 15 cubic centimeters' capacity, with trocar, cannula, and blunt-pointed probe of exactly the same size as the trocar. The best caliber for the cannula is from 1.8 to 2 millimeters. The trocar should be inserted through as thick a layer of healthy tissue as possible before the abscess cavity is entered, and where possible the highest point of the cavity should be penetrated, this being less likely to result in the formation of a sinus. Two movements are employed in the insertion of the trocar—the first, a sharp one, perforates the frozen skin; the second, slow and methodical, guides the point into the abscess cavity. The trocar is now withdrawn and the pus escapes with more or less ease, according to the tension. Soon the flow ceases and the nozzle of the syringe is then introduced into the cannula and more pus withdrawn. Sometimes the opening of the cannula is blocked by caseous pus and then the lumen is cleared by inserting the probe already mentioned. According to the consistency of the pus is largely decided what modifying fluids, if any, should be employed. During the removal of the cannula it is often useful

to aspirate with the syringe, as the vacuum thus obtained keeps in the cannula the fluid which it contains and prevents its escape into the track while it is being withdrawn. As soon as the cannula is removed the track it has left should be squeezed between the fingers, and after having washed the part with alcohol and ether a dressing should be placed over the minute wound which will keep it closed and compressed, preventing secondary infection.

An abscess may be cured after one single aspiration, but in general the fluid re-forms in the abscess cavity, and, after a period varying between one and many weeks, a new evacuation is necessary. Commonly three or four aspirations are necessary to cure definitely an abscess which is easy to empty and of medium severity. If, in spite of repeated simple aspiration, the pus recollects more abundantly each time, the abscess increases in size, and the walls do not show signs of becoming denser by the formation of fibrous tissue, then the injection of iodoform ether will be indicated on account of its drying and sclerosing properties. Two to five cubic centimeters should first be employed, the same syringe being used as in the aspiration. The fluid being injected the piston is left at the bottom of the syringe, and when the ether begins to evaporate the piston is gradually pushed away. The syringe is then detached from the cannula and the ether escapes hissing. As soon as a certain quantity of liquid ether appears, the syringe is replaced and kept in position until new volatilization is indicated by ascent of the piston. The cannula is not withdrawn until one is assured that no liquid ether remains in the cavity. Usually from ten to twenty cubic centimeters of iodoform ether produce no toxic effects; in general it is not

necessary to exceed, even with patients who would tolerate it, doses of ten cubic centimeters.

If the contents of the abscess are caseous, cautious injection of camphor-thymolether solution in doses of from two to five cubic centimeters, not exceeding the latter, should be employed. The solution consists of thymol, 1 part; camphor, 2 parts, and ether, 3 parts. If the inflammatory action is too active after this injection, moist dressings to the part will restrict it during the period which elapses between the injection and the time the material injected has accomplished its work in dissolving the caseous material and permitting its evacuation by aspiration (as a rule, from twenty-four to forty-eight hours).

The abscess sometimes increases rapidly, is extensive, the tissues around are being invaded, and the general condition is unsatisfactory. This form is rare and coincides usually with defective treatment of the initial lesion, either by faulty immobilization or neglect of the general hygienic treatment, or both. In this case the defects in treatment should be made good and if, in spite of this, the abscess does not decrease in size the following mixture should be used: Iodoform, 5 grammes; ether, 10 grammes; guaiacol and creosote, 2 grammes of each, and sterilized olive-oil, 100 cubic centimeters.

The results obtained with these procedures were as follows: Out of 29 cases of spinal caries with abscesses, 27 were cured; 2 remain with sinuses which are not infected with diminishing discharge and good general condition. Of 33 cases of hip disease, 32 were cured, 1 remained with a sinus due to a secondary infection caused by improper sterilization of the instruments employed in aspiration. The number of aspirations

was from one to twenty-one in each case. Twenty-three closed tuberculous abscesses, of which eight were in connection with spinal lesions, thirteen with the hip, and two with the knee, were treated by aspiration and all are apparently cured except one hip case in which a small, uninfected sinus persists. J. Calvé and H. J. Gauvain (*Lancet*, March 5, 1910).

UTERINE OBSTRUCTION, THERAPEUTIC DRAINAGE IN.

From a study of several thousand women, it is the author's belief that intermenstrual uterine obstruction is far more productive of chronic pelvic disease than the more readily recognized discomfort or actual suffering during menstruation. A special plan of treatment for the relief of this condition was carried out in a series of 185 cases. Among these, obstruction to menstruation was the most frequent and principal symptom, being associated with retroversion in 42 cases, retroflexion in 4 cases, fixation in 28 cases, and ante flexion of the cervix in 53 cases. Sterility was caused by the obstruction in 57 cases and pain in 95 cases. Thirty-four cases of obstruction and retention, with well-marked evidences of infection after premature expulsion of the foetus, were all drained and demonstrated the efficiency of the method in overcoming retention, absorption and toxæmia, as shown by the rapid subsidence of all symptoms within thirty-six hours and the early rise of temperature, pulse and respiration if the drain was prematurely withdrawn. The author's plan of treatment is as follows:—

In case of obstruction, with or without flexion, evidenced by pain when passing a sound through the internal

os, by atypical menstruation, by sterility, or by intractable headache, the cervix should be dilated to 38 F., the cavity curetted and irrigated, and a bivalve or fenestrated rubber drain sutured into the cervix, there to remain for from four to six months. When the obstruction is associated with sepsis following abortion, miscarriage, or labor, in addition to the 3-inch drain which has been inserted, a roll gauze wick should be introduced into the vagina, being made long enough to protrude between the labia and come in contact with the vulvar pad, thus establishing continuous drainage from the interior of the uterus to the outside pad, a very important factor in the prevention of vaginal absorption and toxæmia. When obstruction is combined with version, the fundus should be rotated forward and supported by an Albert Smith pessary, inserted broad end down and resting under the symphysis.

Shortened, tender uterosacral ligaments and adhesions may be gradually stretched after the plan of Brandt, or forcibly loosened under anæsthesia; these means failing, resort must be had to vaginal or abdominal celiotomy to free the uterus, and if need be resection of the adnexa and suspension of the uterus by the round ligaments. In married nullipara, or those who have been sterile for years and are approaching the time of their probable menopause, carrying a heavy, displaced adherent uterus, hysterectomy offers the one plan for permanent relief. Trachelorrhaphy was practised in a few instances of deep laceration into the fornices, and where the cervix was greatly hypertrophied and cystic, but amputation was abandoned, as it shortens and removes a part essential to

the support of the uterus in its normal position. Perineorrhaphy should be done whenever the perineum is found to consist of but two layers of skin without any intervening muscular structure. A. E. Gallant (Medical Record, April 16, 1910).

VACCINE THERAPY IN GYNÆCOLOGY AND OBSTETRICS.

Opsonins undoubtedly play a part in the production of active immunity. On the other hand the determination of the opsonic index is technically very difficult and is subject to such variations that it is not available as a diagnostic or prognostic guide, and even among trained bacteriologists there is considerable skepticism as to its practical value.

Immunization by means of vaccines is a well-established prophylactic measure against certain infectious diseases, notably typhoid, cholera, plague, and dysentery. Vaccine therapy is undoubtedly a valuable remedial agent in local infection due to the tubercle bacilli or the staphylococcus, less so in local infections due to other pathogenic bacteria, while there is considerable doubt as to its efficiency in acute general infections.

In chronic gonorrhœal arthritis and urethritis it is a valuable adjunct to other treatment and occasionally may lead to cure alone. It appears to be useless in the acute infections, while it is more efficient in the treatment of the vulvovaginitis of children than any other means, but even here it does not always result in cure.

In infections of the urinary tract, especially those due to the colon bacillus, it sometimes results in symptomatic cure, but rarely relieves the bacteriuria. The scanty reports, concerning the pyelitis and the pyelonephritis of pregnancy, indicate that vaccine therapy is no more

efficient than the usual treatment by rest in bed and the administration of salol or urotropin, as in neither does the bacteriuria disappear until after the termination of pregnancy.

In certain cases of endometritis it appears to reinforce the curative influence of curettage. The reports concerning its use in pelvic inflammatory diseases are too scanty to justify conclusions, but it would seem that it may be of value only in chronic post-operative cases with sluggish fistula formation.

As the ordinary localized puerperal infections, irrespective of the nature of the offending bacteria, tend to spontaneous cure, the field for vaccine therapy is practically limited to acute general infections where it unfortunately appears to be of little value, and the most that can be said for the reports thus far available is that its employment does no harm. J. W. Williams, E. B. Craigin, and F. S. Newell (*Surgery, Gynecology and Obstetrics*, July, 1910).

WASSERMANN'S REACTION.

The Wassermann original method, though it entails more labor, since every ingredient of the reaction is used in a known quantity, gives results, both qualitative and quantitative, which cannot be attained by any of the modifications. In the primary stage of syphilis the use of Wassermann's reaction is limited. Taking all the periods of the primary stage a positive result is not obtained in more than 40 per cent. of cases; hence it is wise to place no reliance upon a negative reaction in this stage. If positive, the course is clear: the patient should be treated as a syphilitic. Otherwise a positive diagnosis can be obtained only by finding the spirochæte pallida, the secretion of a sore being examined with the "dark

ground illumination," either by using a special condenser ("ultra-microscope"), or by means of Chinese ink (Burri's method). In the latter method a platinum loopful of the secretion is placed upon a slide surrounded by seven or eight loopfuls of distilled water and the same quantity of the Chinese ink solution, the whole mixed and spread out on the slide, allowed to dry, and examined with oil-immersion lens. The ink produces a dark background and the objects under examination, including the living spirochæte, stand out white.

In secondary syphilis a positive Wassermann is obtained in 85 per cent. of all cases—cases alike where an eruption is present, where there is no manifestation at the time, and where the patient is undergoing treatment. When there is a rash and the patient has not yet had any mercury no less than 97 per cent. give a positive result. When no sign is present 80 per cent. of cases in the secondary stage are positive. The positive cases should receive treatment at once. The other 20 per cent. may be negative: (1) because the syphilitic virus has disappeared or is dormant and there is no specific antibody in the serum; (2) because the patient is taking mercury; and (3) because he is one of the 3 per cent. who, in any case, give a negative reaction. Having sufficient evidence that in the first of these categories the patient has had syphilis, and that he has not received at least two years' treatment in spite of the negative reaction, treatment should be continued till the end of the third year. The earlier the disease is diagnosed and the more vigorous the primary treatment, so much the sooner will a permanent negative reaction be given. It is not uncommon to find, however,

that late syphilitic lesions never give a negative reaction, no matter how energetic the treatment may be at the time. The most vigorous of all forms of treatment is by inunction daily under medical control, no "rubblings" being given at home. The mercury gets into the system quickly, and the amount absorbed can always be gauged by the straight line the gums take, especially below the incisor teeth of the lower jaw. Injections are less potent and oral administration very much less.

Under tertiary syphilis may, for convenience, be considered those cases which come up after three years' treatment, since there is no hard-and-fast line between the secondary and tertiary stages. Of these 70 per cent. give a positive result. Many have no symptoms and give a negative result; these may be regarded as cured. Others have no symptoms but yet give a positive result; in these some visceral lesion should be suspected. When a positive result is given, treatment should be started, except in cases of tabes and general paralysis of the insane, in which mercury usually tends to aggravate and hasten the disease. In the former cases about 60 per cent. of cases give a positive reaction; of the latter, 100 per cent., the high percentage being probably due to the lack of signs of syphilis in the earlier stages of the disease, this implying also a lack of treatment.

Wassermann's reaction is extremely useful in such cases as the following: (1) where there is doubt as to whether syphilis has formerly been present; (2) differential diagnosis between varicose ulcer and gumma; (3) between gummata of the testes, tuberculosis, and new growth; (4) between gummatous periostitis and sarcoma; (5) between

gumma and malignant growth of the liver; (6) between syphilitic disease, tuberculosis, and carcinoma of the rectum; and (7) in the case of a man who has had well-treated syphilis and is anxious to know whether it is safe for him to marry. In the last-mentioned case it is wise to allow three or six months to elapse, after the last treatment, before the blood is examined. J. E. R. McDonagh (*Lancet*, April 2, 1910).

X-RAYS, THE ACTION OF, ON PROLIFERATING TISSUE CELLS.

Experiments were carried out by the author to elucidate the question as to whether small doses of the X-rays exercise any degree of destructive effect, such as that produced by strong applications, or whether, instead, there results a stimulus to cell proliferation. In experiments on young plants he found that, while strong applications of the rays interfered with proper development, small doses, on the contrary, stimulated the growth of the plants to an extraordinary degree. The same principle was found to hold good in the case of animal cells. One-half of a flabby, sluggish ulcer on the author's forearm healed completely within twelve days under the influence of weak X-ray applications, whereas the remaining untreated portion required about a month. From observations such as these it would appear, according to the author, that weak applications of the rays to malignant tumors can only prove harmful and should be avoided. Strong applications are, on the other hand, antagonistic to processes of repair in normal tissues; hence only weak doses should be employed in the treatment of simple, atonic, superficial lesions. Schmidt (*Berliner klinische Wochenschrift*, May 23, 1910).

Clinical Summary

Of all practical articles and abstracts that have appeared in the Monthly Cyclopædia and Medical Bulletin during the current year.

Actinomycosis. **DIAGNOSIS.** Presence of corpora flava not essential to diagnosis of this condition. Repeated examinations of suspicious material often required. Only injection of actinomycotic pus or ingestion of material upon which actinomyces is grown will reproduce actinomycosis in animals; inoculation with pure cultures unsuccessful.

TREATMENT for actinomycosis of uterine appendages: 1. Extirpation and drainage. 2. For fistula, application of tribromphenol bismuth or irrigation with copper sulphate. 3. Potassium iodide internally, up to 75 grains daily. *Wagner.* Page 290

Addison's Disease. **TREATMENT.** Begin with 3 grains of desiccated adrenal gland three times daily after meals, and gradually increase the dose till temperature and pulse become normal; then maintain last dose. *Sajous.* 75

Adrenals, Diseases of. **DIAGNOSIS.** Adrenal insufficiency is suggested by: 1. Circulatory disturbances (small pulse, low tension, tachycardia, chilliness, white line). 2. Digestive disturbances (anorexia, vomiting, diarrhea or constipation). 3. Nervous disturbances due to toxic irritation of plexuses around adrenals. 4. General disturbances (anæmia, emaciation, progressive amyotrophy). Diagnosis confirmed by benefit from organotherapy. *Boinet.* 27

Anæmia. **TREATMENT.** Seven cases of severe anæmia greatly benefited by transfusion of only 5 cubic centimeters (75 minims) of human blood. No benefit in cases of leukæmia. Transfusion of this amount generally harmless, though blood from certain persons showed some toxicity. *Weber.* 63

In anæmia due to auto-intoxication from gastro-intestinal tract, as often occurs in chlorosis: 1. Favor gastric functions by proper diet. 2. Secure regular bowel movements by laxatives. 3. Begin use of iron, giving following pill: Subcarbonate of iron, 0.10 gram ($1\frac{1}{2}$ grains); powdered aloes 0.02 gram ($\frac{1}{3}$ grain); extract of rhubarb, 0.05 gram ($\frac{3}{4}$ grain); two pills before meals. *Huchard and Fiessinger.* 298

Gastric hyperæsthesia in anæmia and chlorosis favorably influenced in several instances by aluminium silicate, given in the form of neutralon in doses of $\frac{1}{2}$ to 1 dram in 3 ounces of water, $\frac{1}{2}$ to 1 hour before meals. *Rosenheim and Ehrmann.* 352

Aneurism, Aortic. **DIAGNOSIS.** Early positive diagnosis only by the X-ray. Expansile pulsation not constant. Abnormal

dullness a valuable sign when present. Most constant sign is systolic bruit; present in 11 of 19 cases. Tracheal tugging in but 2 cases. Earliest and most constant symptoms were dyspnea and cough. Interference with passage of bismuth capsule the size of a quarter through œsophagus found present in every case tested (by X-rays); especially valuable in small aneurisms growing back from transverse part of arch and shows œsophageal obstruction before dysphagia appears. *Lange.* 349

Angina Pectoris. **DIAGNOSIS.** Presence or absence of signs of organic disease at root of aorta should be ascertained. Signs of general arterial or aortic disease coexisting with history of precordial pain warrant diagnosis. A slight harsh clicking sound accompanying or following the sound of aortic closure, suggesting to the ear a roughening of the aortic cusps, is of value in the diagnosis. *Butler.* 22

TREATMENT. Erythrol tetranitrate has a less marked but more lasting effect than nitroglycerin. Especially indicated in those patients who are awakened at night by the pains. *Huchard and Fiessinger.* 172

Ankylosis. **TREATMENT.** Fibrolysin used with benefit in joints ankylosed as result of rheumatic affections. Single dose used was 2.3 cubic centimeters (37 minims) subcutaneously, sometimes more; largest total amount given was 117.3 cubic centimeters (4 ounces). Untoward effects: sometimes sensation of fatigue on day of injection, and occasionally slight local inflammatory reaction, which disappeared with moist dressings. Best results where ankylosis due to extra-articular connective tissue; less improvement in presence of pus and in gonorrheal cases. Used in conjunction with hygienic and dietetic measures, warm sulphur baths, and later active and passive movements. *Knotz.* 124

Appendicitis. **DIAGNOSIS.** Following sign often useful in diagnosis between appendiceal and pelvic inflammation: Stretching skin of abdomen slightly to increase its translucency, veins internal to anterior superior spine, and running upward and slightly inward, will be found darker than elsewhere when appendix involved. *Skinner.* 350

Appendicitis, Acute. **TREATMENT.** Where patient carried through an attack without operation, give only liquid diet till appendix removed. In perforative or gangrenous cases suffering from beginning diffuse peritonitis, gastric lavage, slow instillation of normal saline by rectum and abstinence from ca-

thartics or food by mouth are indicated; 97 per cent. can later be safely operated. *A. J. Ochsenr.* Page 360

Appendicitis in Pregnancy. TREATMENT. In severe cases operate without delay. Mild cases do not demand operation unless there are frequent attacks. When near the end of gestation or in labor, terminate pregnancy and remove appendix immediately after. *Findley.* 160

Arteriosclerosis. DIAGNOSIS. Careful ophthalmoscopic examination frequently reveals the earliest signs of arteriosclerosis. *Bruner.* 23

TREATMENT. In 2 cases of arteriosclerosis in diabetes, blood-pressure was lowered and arteries rendered softer by treatment with dried thymus, 30 to 120 grains three or four times daily. Author uses fresh thymus of calves, dried by himself. *Guyer.* 424

Following method recommended: Give patient light bath for a few minutes, bringing blood to surface and causing sedation. Follow this with static breeze for five to ten minutes—helpful in asthenia. Then apply high frequency current for ten to fifteen minutes. Diminution in arterial pressure follows. Séance should always cease when pressure falls to normal, otherwise harm may result. In intestinal atony complicating arteriosclerosis, faradic current, applied over abdomen, may be helpful. Mercury, iodine, iron and arsenic also to be administered, according to indications. *Satterthwaite.* 407

Arthritis Deformans. TREATMENT. Progress of disease often stopped by removal of causes of irritation, such as inflamed appendix, hæmorrhoids, etc. Where primary lesion obscure or no longer operative, best results obtained indirectly by relieving pain in affected joints. This is done by applying an absolutely rigid retention dressing, with the limb in such a position that the antagonistic muscles are in absolute equilibrium. If limbs cannot be brought into desired position without extreme pain, contractures are broken up under anesthesia, and tendons lengthened, if necessary, by tendoplasty. Plaster-of-Paris dressing is applied, and allowed to remain until pain and irritation have subsided. A new plaster mold reinforced with basket splints and wheat gluten bandages is then substituted. *E. H. Ochsenr.* 221

Ascites. TREATMENT. Autoserotherapy retards transudation into peritoneum and produces lasting polyuria. Under local anesthesia withdraw a little fluid from peritoneal cavity with sterile hypodermic syringe, and at once reinject in subcutaneous cellular tissues. Repeat at six-day intervals, injecting progressively larger doses of ascitic fluid (3, 5, 8, and 10 cubic centimeters). Continue treatment for two months. *Audibert and Monges.* 160

Asphyxia. TREATMENT. Adrenalin, slowly administered intravenously; 10 drops of 1:

1000 solution in 1 dram of saline solution. Artificial respiration. *Sajous.* 75

Asthma. TREATMENT. To arrest paroxysms, adrenalin (5 to 10 minims of 1:1000 solution in 1 dram of normal saline) may be slowly injected into a superficial vein or hypodermically. *Sajous.* 75

Thyroid and corpus luteum preparations found valuable in 7 out of 14 cases. Thyroid beneficial in 6 cases; corpus luteum in 1. Began with dose of only 0.025 gram ($\frac{1}{4}$ grain) of powdered thyroid, given in cachet once daily; later increased to 0.10 gram ($\frac{1}{2}$ grains). Asthmatic paroxysms ceased or were greatly diminished. Also useful in asthmatoïd dyspnœa of renal and gastric cases and in ordinary nasal asthma or hay asthma. *Léopold-Levi and H. de Rothschild.* 413

Adrenalin, given by hypodermic injection in the dose of 10 minims of the 1:1000 solution, found in a number of cases to relax the spasm of asthma instantly. When taken by mouth, ineffectual. In one case, adrenalin injections every evening in the hay season, served to ward off hay fever and accompanying asthma. *Melland.* 476

Brain Tumor. TREATMENT. A decompression operation is indicated where grave symptoms of increased intracranial pressure exist, and especially should not be delayed when papilledema (choked disc) is developing rapidly. If the symptoms do not call for immediate decompression, antisyphilitic treatment may first be tried. *Spiller.* 223

Carbuncle of Face. TREATMENT. Passive hyperemia by means of band around lower part of neck used with success in carbuncles of face and on back of neck (when high enough). Use band of rubber tissue 3 centimeters broad. Mild constriction sufficient and band should be worn 20 to 22 hours daily unless œdema appears. Relieves pain; on third day purulent discharge sets in, lasting a few days. Avoid squeezing out pus. Intervention with knife unnecessary. *Keppler.* 292

Carcinoma. TREATMENT. Quinine, stirred with water to a paste, used locally in cases of epithelioma where operation refused. Application repeated four times on alternate days. Caustic action at first exerted on ulcers, which later healed completely under simple iodoform dressing. Also useful in palliative treatment of inoperable uterine cancer. The remedy is of diagnostic value, as on ordinary erosions it does not have the destructive effect produced on cancer. *Stroné.* 94

The use of high-frequency currents found valuable in treatment of malignant growths, denuded surfaces, slowly healing wounds, and tuberculosis. On epitheliomas they exert a selective cytolytic action. Infected glands disappear, and discharge becomes odorless. Current has an analgesic effect. Time of application should never exceed 10 minutes. For

internal growths current is used after operation to promote cicatrization. *Rivière.*

Page 124

Acetone used in palliative treatment of 15 cases of inoperable uterine cancer. Hardens the tissues and stops hemorrhage, septic absorption, and odor. After curetting under ether, solution of acetone is poured into the cavity through a conical speculum, contact with normal vaginal tissues being avoided. Hips elevated. Excess drained off through speculum and subsequently by tampon. When discharge begins again treatment is repeated without ether. Pain was not relieved but marked relief obtained from general infection. *Tovey.*

122

Carcinoma of Stomach. DIAGNOSIS. Danger-signal: middle age, loss of weight and strength, with perhaps some dull epigastric pain. If, in spite of six or eight weeks' careful treatment, symptoms increase in severity, loss of weight becomes more out of proportion to dyspepsia, appetite leaves, and some anemia appears, diagnosis of probable malignancy is justified and operation indicated. *Deaver.*

175

Malignant disease has been demonstrated by X-rays, through its invasion of stomach-cavity and resulting changes in peristaltic waves. *Leonard.*

178

Cataract. TREATMENT. Euphthalmin hydrochlorate in 3 or 5 per cent. solution used as mydriatic in cases of bilateral cataract where central opacity precedes cortical involvement and where iridectomy for any reason cannot be performed. Vision through the uninvolved cortical portion of the lens thus becomes possible. After using one or two drops in each eye, mydriasis begins in 20 minutes and lasts 4 to 7 hours. No untoward effects observed. *Dufour.*

165

Cellulitis with Gangrene. TREATMENT. Case of diffuse phlegmon of leg with gangrene treated successfully with: 1. Linear applications of thermocautery. 2. Subcutaneous injections of hydrogen peroxide 1 to 2 centimeters above infected area. 3. Passive hyperemia induced thrice daily by rubber bandage above knee. 4. Daily bathing of part in warm permanganate solution. 5. Wet dressing of hydrogen peroxide. *Petit.*

173

Chilblains. TREATMENT. 1. Measures to allay co-existing irritative influences originating in various portions of body, as the nasopharynx, teeth, respiratory or digestive tracts, etc. 2. Gymnastic exercises of extremities at hourly intervals. Arms raised above head, with alternate flexion and extension of hands and fingers. Similar movements of lower limbs. 3. Protection from cold. 4. Kneading, after raw surface of chilblain has become covered. *Jacquet and Jourdanet.*

162

Cholecystitis. TREATMENT. Irrigation with normal saline solution, at the rate of about six drops per second and with elevation of one foot, of biliary fistulæ, after drainage

of gall-bladder for cholecystitis, cholelithiasis or cholangitis: 1. Produces prompt diuresis. 2. Hastens disappearance of chronic jaundice. 3. Often relieves postoperative biliary vomiting. *McArthur.*

87

Curable by diet and hygiene or operation. Cholecystostomy usually adequate. Cholecystectomy when gall-bladder gangrenous or duct completely obstructed; should be performed several months after primary cholecystostomy. *B. Holmes.*

292

Cocaine Poisoning. TREATMENT. Administer ether by inhalation, only to the degree of mild surgical narcosis or even less. Employ a mask and give anæsthetic by drop method. Probably also valuable for poisoning by stovaine or other synthetics. *Engstad.*

414

Colitis, Chronic. TREATMENT. Rectal use of hot solution of gelatin beneficial in obstinate cases of catarrhal colitis with diarrhœa. First give enema of one pint of water at 25-28° C. (77-82° F.), and when this is evacuated, have patient rest half to three-quarter hour. Then introduce through nozzle four or five inches long 40 to 80 cubic centimeters (1½ to 2½ fluidounces) of 10-per-cent. solution of gelatin in Carlsbad water (Sprudel) at 45-52° C. (113-125° F.). Patient lies on back for two hours with warm application over abdomen. Fluid usually retained. *Aldor.*

415

Collapse from Hæmorrhage. TREATMENT. Suprarenalin or adrenalin given very slowly by intravenous method. Use 5 minims of the 1:1000 solution to a pint of warm saline solution (105° F.). In urgent cases, 10 drops may be given in 1 dram of saline solution, and repeated at intervals until heart responds. Artificial respiration hastens effects. *Sajous.*

75

Collapse in Infections. TREATMENT. Obscure collapse in infections often due to adrenal insufficiency. As soon as asthenia and lowered blood-pressure appear, administer adrenalin solution (1:1000) or cachets of glandular extract. In children give 10 to 20 drops of 1:1000 solution daily, divided into 5 or 6 doses. *Moizard.*

160

Constipation. TREATMENT. Appendicostomy considered as indicated in: 1. Cases of severe atonic constipation where colon much dilated and sacculated. 2. Cases of obstructive constipation where obstruction cannot be directly dealt with, e.g., where inseparable adhesions between viscera and abdominal wall. 3. Cases of congenital dilatation of the colon, as alternative to resection of bowel. Instances of favorable results from appendicostomy mentioned. *Mummery.*

415

Where hard feces accumulated in rectum, mucous membrane excoriated, and sigmoid tender, wash out rectum and colon with several quarts of hot water containing a few drams of sodium bicarbonate, borax or boric acid, introduced slowly with patient in knee-

chest position, or with hips elevated. Then inject half tumblerful of oil in rectum and leave over night. *Tyrode.* Page 416

Coryza. TREATMENT. Sodium salicylate causes a cold to abort if taken within 24 to 36 hours. Single dose of $7\frac{1}{2}$ grains (0.5 gram) often suffices. Taken later, it relieves symptoms and shortens attack. It is also valuable in the chronic coryza of gouty subjects. Should be taken after eating, and preferably in small doses, dissolved in half a glassful of water. *Courtade.* 174

Cystitis, Acute. TREATMENT. Collargol beneficial when used locally in this condition or in pyelitis. *Albrecht.* 234

Cystitis, Chronic. TREATMENT. 1. Where urine acid, alkaline diuretics and mineral waters; where urine alkaline, urinary antiseptics, e.g., capsule containing 5 grains each of urotropin and salol. 2. Local treatment: bladder irrigations. Empty bladder, introduce soft-rubber catheter and introduce warm solution of one grain each of silver nitrate and potassium permanganate in a pint of distilled water, until bladder comfortably distended. After evacuation, repeat the process. Then inject $\frac{1}{2}$ ounce of one of silver salts, to be retained. *Christian.* 416

Delirium Tremens. TREATMENT. Veronal used in 100 cases, and all but 3 benefited. Initial dose of 1 gram (15 grains) in incipient cases, repeated in 3 hours if sleep does not follow. Sleep then usually lasts 6 to 8 hours and on waking patient is quiet and feels well. If tremor is still present, 0.5 gram ($7\frac{1}{2}$ grains) veronal may be given. The same dose every evening prevents insomnia. Where delirium is not controlled by the first 2 grams, another gram may be given 5 to 6 hours after the second dose. One case of veronal rash noted. *Müller.* 88

Diabetes. TREATMENT. Phosphoric acid preparations valuable in diabetic cachexia. Phosphoric acid, 75 grains; acid sodium phosphate, 150 grains; distilled water, 10 ounces; one tablespoonful in water at every meal. Contraindicated where albuminuria. *Cautru.* 163

Calcium iodide used in 17 cases in doses of 5 to 15 grains three times daily, after treatment with codeine and diet had proved unsatisfactory. In all cases subjective symptoms were improved and amount of sugar in urine diminished. *H. E. Smith.* 164

X-rays projected over hepatic region cause decrease in glycosuria and rise in red blood corpuscles. In one case amount of sugar passed daily was reduced by 400 grams. Particularly effective in grave forms with emaciation and debility, less so in mild cases and those of obese type. *Ménétrier, Touraine and Mallet.* 178

Diarrhœa, Dyspeptic, of Infancy. TREATMENT. Calomel, one grain in broken doses, followed in 2 hours by castor oil, one dram. Daily irrigation of colon. If much vomiting,

wash out stomach and colon, and follow by starch enema not exceeding 2 ounces. For two days give barley water, 2 fluidounces every 2 hours; for next two days, whey, 2 fluidounces every 2 hours. *Hollopeter.* 97

Digalen. This form of digitalis is not invariably free from cumulative effect, as has been claimed, but is better borne by the stomach than the galenic preparations. *Mayor.* 164

Drowning. TREATMENT. Adrenalin, 10 drops of 1:1000 solution in 1 dram of saline solution, slowly administered intravenously. Repeated at intervals until heart responds. Artificial respiration. *Sajous.* 75

Duodenal Ulcer. DIAGNOSIS. In cases of epigastric pain coming on some time after meals, presence of Cammidge's C reaction shows probable existence of a duodenal ulcer rather than a functional hyperchlorhydria in stomach. Five cases in which reaction was positive and duodenal ulcer found at operation. *Herschell.* 293

Dysentery, Amœbic. TREATMENT. 1. Rest important, even using opium if required. 2. Calomel at first where patient strong, then magnesium sulphate, 1 dram every 3 hours, as long as scybala being passed. Purgatives bad, however, where initial symptoms very acute, and in late stages. 3. Ipecac, in capsules of animal membrane or salol-coated pills; 30 grains in one dose on first day, reduce by 5 grains on each succeeding day until sixth, then give 5 grains nightly for a week or 10 days longer. Patient should fast 4 hours before taking the remedy, and remain quiet afterward. 4. Colonic irrigations hardly give better results than ipecac. Best is quinine 1:5000, increased to 1:1000; next to quinine is silver nitrate. Have fluid retained 15 to 20 minutes. 5. Appendicostomy where refractory to rectal irrigations. Marked success in 2 cases, using quinine or saline solution through fistula. Perform operation in two stages: first bring base of appendix against abdominal wall, stitching meso-appendix to peritoneum; 48 hours later, apply cocaine to appendix, snip off with scissors and introduce No. 10 rubber catheter. *Anders and Rodman.* 290

Dyspepsia of Old Age. DIAGNOSIS. Of every 100 cases in persons over 65 years of age, 66 are secondary to organic disease of some important organ (kidneys, prostate, heart, lungs, liver, pancreas, chronic gout, etc.); 34 are due to degeneration of gastric and intestinal secretory structures. *Fenwick.* 24

Eclampsia. TREATMENT. Bilateral renal decapsulation employed in three dangerous cases with excellent results, after other measures had failed to bring on diuresis. *Lichtenstein.* 294

Eczema. TREATMENT. X-rays of value in subacute and chronic forms. In vesicular variety, mild applications suffice; in squamous and pustular eczema, more vigorous

treatment required. Eczema of lips, ears, axillæ and anal region especially adapted for X-rays; itching relieved. Seborrhæic eczema of face also benefited. *Müller*. Page 239

Emissions, Nocturnal. TREATMENT. Styp-tol (cotarnine phthalate) found to prolong interval between emissions to from one to three weeks in all cases. Two, then three, styp-tol tablets of $\frac{3}{4}$ gram each administered before retiring, for a month. Fluidextract of hydrastis, 40 to 60 drops before retiring, also recommended. *J. Koenig*. 127

Epilepsy. TREATMENT. Diet low in proteids caused reduction in number of seizures by 14 per cent. Each of the three daily meals given consisted of 125 grams of bread, 16 grams of butter, and 250 cubic centimeters of milk. *Rosanoff*. 89

Exploratory trephining advised in traumatic epilepsy. Eleven cases operated, four of idiopathic and seven of surgical epilepsy. Cysts found in two instances, cicatrices in four, and œdema of pia in all. Improvement resulted in all the cases from removal of œdematous fluid. Epileptic attacks returned in four cases. *Tilman*. 127

Epithelioma. TREATMENT. Commercial 40 per cent. formaldehyde solution applied in two cases with successful results. After three applications dead neoplastic tissues separated, leaving granulating surface, which later healed completely. Pain obviated by injections of 1 per cent. novocaine solution. No recurrence in ten months. Method suitable for comparatively small lesions without lymphatic involvement, where patient refuses operation. *Hallopeau and Fumouze*. 294

Extra-Uterine Pregnancy. TREATMENT. In first half of an ectopic pregnancy operation for removal of gestation sac is indicated wherever conditions permit. In latter half, however, patient, under favorable surroundings, should be allowed to go within two or three weeks of term before operation, meanwhile being kept under watch. Removal of placenta at operation is of cardinal importance; if this be impossible, placenta should be shut off from peritoneum by gauze. Dependent drainage through vagina should be secured. *Peterson*. 225

Felon. TREATMENT. Operation advised as soon as diagnosis made. Patient should eat a substantial meal before the operation, and remain in recumbent posture until half an hour after operation is over. After applying tincture of iodine, inject sterile 1 per cent. cocaine solution in a circle at root of finger; as much as 3 or 4 grams (45 minims or 1 dram) of solution may be used. If felon very small, inject instead around lesion itself, 1 centimeter from its margin. Five minutes later incise, irrigate with hydrogen peroxide and establish drainage. Rest of treatment includes bathing of part in warm peroxide (1 in 4) and sterile compresses of same. *Appelmann*. 167

Femur, Fracture of. TREATMENT. Combination of Buck's weight and pulley system with suspension by the Hodggen splint gave very satisfactory results. Traction can be accurately measured and maintained, transverse displacement corrected, and comfort greatly increased. After extension is applied, the supporting bands attached to splint are passed under limb, which is then swung clear of bed. Supporting bands are adjusted to make support uniform, and later, if desired, to exert coaptative pressure anteroposteriorly or laterally on the fragments. *Stimson*. 226

Fibroids, Submucous. DIAGNOSIS. Gradually increasing dysmenorrhœa and menorrhagia, with consequent anæmia and "nervous debility," are typical symptoms which, in a woman of thirty years or over, should lead one to suspect this condition. In differential diagnosis, enlarged uterus from subinvolution, metritis, endometritis, and pregnancy should be considered.

TREATMENT. When submucous fibroid large and sessile: hysterectomy. Vaginal operation limited to removal of polypi, owing to importance of exploration of pelvis and abdomen where tumor of some size. Transperitoneal enucleation slightly increases operative risk, but if desired by patient in order to preserve uterus, may be performed. *Truesdale*. 225

Fibrolysin. Best given by intramuscular injection in dose of 35 minims (2.3 cubic centimeters), every other day. Desired solvent effect on local connective tissues is kept up by massage of the part. Connective tissue surrounding old infectious foci may also be affected and dormant bacilli set free; hence it is well to search for and exclude previous inflammatory disturbances in every case before using this remedy. *Stocker*. 167

Furunculosis. TREATMENT. In furunculosis, carbunculosis, acne and subcutaneous abscesses brilliant results from vaccine therapy can be expected. In chronic cases, best results when a fresh vaccine is prepared from the pus every two to four weeks. Cautiously increase dose at successive inoculations. *Thomas*. 161

Gallstones. DIAGNOSIS. Too often delayed. In most cases condition begins before fortieth year. Almost every patient will give history of long-standing dyspepsia, capricious appetite, constipation, flatulence largely independent of meals, and discomfort when stomach is empty. Later, acute attacks of pain in right upper abdomen may appear, and finally true biliary colic, with vomiting. Sensation of chilliness is characteristic. Jaundice, hæmatemesis, etc., as well as laboratory methods, are practically valueless for purposes of early diagnosis from gastric and duodenal ulcer. *Deaver*. 175

Gangrene, Diabetic. TREATMENT. Currents of air heated to 150°, 300°, 500° C., or even higher, applied repeatedly, found to

prevent extension of gangrene and arrest toxic absorption by producing carbonization of the part. Amputation can then be performed with greater safety. *Dieulafoy.* Page 223

Gastro-enteritis of Bottle-fed Infants. **PROPHYLAXIS.** 1. Certified milk or clean milk fresh from cow; if neither available, Pasteurization. 2. Fresh air. 3. Avoid overheated rooms. In hot weather child should be placed out-of-doors at night on properly screened porch. 4. Avoid overfeeding by giving boiled water to drink. 5. Light clothing and frequent cool bathing. 6. Destroy flies.

TREATMENT. 1. Withhold food for three days; then give barley-water. 2. Have child rest quietly in bed out-of-doors. 3. Wash stomach with boiled water at 100° to 110° F., with a little lime-water added. Before withdrawing tube introduce 2 drams of castor-oil and give thorough colonic irrigation. In cases seen later stomach washing not indicated unless gastric irritability present. After stomach settled give cool boiled water freely by mouth. 4. Colonic irrigations every 4 hours on first day, and later twice daily. Nutrient enemata every 4 hours, following irrigations. Be cautious with cathartics. 5. Tub-bath, lasting 10 to 20 minutes, to control temperature and restlessness. 6. Drugs: Bismuth subnitrate, 1 to 2 drams daily, in a child of one year. Salol, 1 to 2 grains every 3 hours. Opium where pain and continued frequent stools. Brandy in boiled water where prostration; $\frac{1}{2}$ ounce in 24 hours. *Hulse.* 295

Glycosuria. **TREATMENT.** Glycosuria in elderly persons often results from only a certain few carbohydrates used in excess, especially cane-sugar and wheat-starch. Management consists in ascertaining the harmful ones and removing them from diet. Cut off all carbohydrates for a week, and if glycosuria disappears try oatmeal, at first with water containing saccharin or with butter, later with rich cream. Then try potatoes, peas, beans, etc., one by one, examining urine frequently. Open-air treatment of great value. *Vaughan.* 296

Goiter, Exophthalmic. **ETIOLOGY.** Acute rheumatism occupies an important place among infections which lead to development of Graves's disease. *Souques.* 165

TREATMENT. Previous to operative intervention: 1. Rest cure interrupted by systematic exercises. 2. Sojourn at some resort having elevation of 1000 to 1500 meters (3300 to 4900 feet). 3. Diet poor in albumin and fats. 4. Cool baths and lotions. 5. Internally, phosphorus, arsenic, and iron. Avoid measures producing rise in blood-pressure, as well as active diuretics. *A. Kocher.* 417

Case under observation for one year showed continued improvement under treatment with dried powdered thymus, 30 to 120 grains three or four times daily. *Guyer.* 424

Gonorrhœa. **TREATMENT.** Vaccine ther-

apy caused marked improvement or cure in subacute and chronic cases. Functional results good. *Thomas.* 161

Hæmorrhage. **TREATMENT.** Adrenal preparations valuable in capillary hæmorrhage from pharyngeal, œsophageal, gastric or intestinal mucous membranes. Mastication of tablets of adrenal substance, or ingestion of 5-grain capsules of same, causes vaso-constriction. *Sajous.* 75

Artificial gelatin made by combining gum arabic with perchloride of iron, then sterilizing the whole, very efficient when injected hypodermically, increasing coagulability of blood more actively than calcium chloride. *Ciuffini.* 292

Hæmorrhage in Bladder Operations. **PROPHYLAXIS.** About fifteen minutes before operation tie off all four extremities close to the axillæ and inguinal regions with gauze bandages. When skin of extremities begins to turn blue start operation, which will be remarkably dry. Useful for prostatectomy or removal of bladder tumor. No untoward effects. Less anæsthetic is required in operation, and healing of wound seems to be accelerated. *Kolischer and Kraus.* 418

Hæmorrhoids. **TREATMENT.** In 3 cases of bleeding hæmorrhoids treatment by thymus, 30 to 120 grains of fresh dried gland, three or four times daily, caused great diminution or cessation of hæmorrhages, and improved state of blood. *Guyer.* 424

Hammer Toe. **TREATMENT, OPERATIVE.** Apply Esmarch bandage. Incision $1\frac{1}{4}$ inches long at outer aspect of plantar surface of toe, with center at flexed joint. Dissect skin flaps laterally and continue incision through subcutaneous structures, avoiding artery and nerve. Dissect flexor sheath free from joint, hold it aside, and remove articulating joint surfaces with chisel. Allow subcutaneous structures to fall back in place, hold them by a few fine buried catgut sutures, close skin incision, and dress. Apply plaster-of-Paris bandage fixing toes in hyperextension, making flexor tendons tense, and holding bony surfaces in apposition. After ten days split plaster bandage, and expose field of operation. Then restore dressings and keep in original position for six weeks. *Soule.* 352

Heart, Dilatation of. **TREATMENT.** In asthenic cardiac disorders with dilated right ventricle, dyspnœa and possibly cyanosis and œdema, the adrenal principle improves oxidation and metabolism in the cardiovascular muscles and tissues at large. Tablets of $\frac{1}{2}$ to 2 grains of desiccated gland after meals. *Sajous.* 75

Heart, Neuroses of. **TREATMENT.** In cardiac irritability: 1. Caffeine citrate and tincture of strophanthus, both best given in tablet-trituration, are promptly effective. Caffeine relieves headache and vertigo when present. Cactus useful in some cases; acts more slowly. 2. Local applications, as

cologne, spirits of camphor, ammonia. 3. Light and easily assimilable diet. Avoid meats. 4. Quiet and rest for weeks at a time. 5. Nerve tonic: combined glycerophosphates of lime and soda, gr. v-x *t.i.d.* after meals. 6. Where gastric or intestinal intolerance: milk of bismuth or lactobacilline tablets. 7. To promote sleep: gentle massage of lower limbs before retiring. If hypnotic required, bromural, gr. v-x. *Beverley Robinson.* Page 163

Hepatic Cirrhosis. TREATMENT OF HÆMORRHAGE IN DIGESTIVE TRACT. Prophylactic: 1. Diet of milk, given only in small amounts, frequently repeated. 2. Avoid all exertions or nervous impressions which might raise tension in portal system. 3. Systematic saline purgation. 4. Leeching, at times, to reduce blood-pressure.—Curative: Hæmostatic remedies together with vasoconstrictors or coagulants according to indications. Ergotin, calcium chloride, gelatin injections, and especially injections of fresh antidiatheritic or other antitoxic serum. *Rauzier.* 353

Hernia. TREATMENT. A truss never cures a hernia in adult life, and rarely during childhood. Losses from disability due to hernia avoided only by early radical operation. *A. C. Wood.* 20

Hyperchlorhydria. DIAGNOSIS. Excess of free HCl alone does not warrant a diagnosis of primary hyperchlorhydria, which shows variable symptoms, both gastro-intestinal and nervous. Though 31.6 per cent. had lost weight, the appetite was generally good and examination of the gastric contents and feces showed that digestive power was but little impaired. The nervous manifestations included periods of depression and mental confusion, irritability, various phobias, numbness, paræsthesias, and attacks of faintness. Male sex and constant mental strain seemed to be predisposing factors. *G. M. Piersol.* 65

TREATMENT. Aluminium silicate in the form of neutralon found effective in all cases of gastric hyperacidity or hypersecretion, whether of neurotic or organic origin,—especially where persistent hypersecretion with motor insufficiency. It reduced acidity, relieved pain and aided digestion. Acts as a protective and astringent to mucosa. Dose, $\frac{1}{2}$ to 1 dram in 3 ounces of water. $\frac{1}{2}$ to 1 hour before meals. *Rosenheim and Ehrmann.* 352

Ileus, Paralytic. TREATMENT. Atropine found valuable in 8 cases. Inject 1 milligram ($\frac{1}{64}$ grain) hypodermically and follow shortly after by a stronger dose of 3 to 5 milligrams ($\frac{1}{22}$ to $\frac{1}{12}$ grain). Improvement and abundant fecal discharge within ten hours. *Lederer.* 229

Infant Feeding. Salts of cow's milk sometimes cause tendency to convulsions; treat by temporary salt-free diet. Sugar intoxication or intolerance of fats may likewise exist; treat by elimination of these from diet. *Neff.* 24

Intestinal Protein Indigestion. TREATMENT, DIETETIC. Cut proteids to a minimum, give chiefly cereals and other starches, and supply assimilable fats guardedly. A little lean meat or milk, or vegetables rich in protein may, however, be allowed to avoid loss of weight. Gelatin, junket, whey, and buttermilk often valuable. Fermented milks especially useful when stomach also deranged and in gout and arteriosclerosis. Where hyperacidity and spasmodic pain prominent, give hot olive-oil. Forbid tea, coffee, and alcohol, and encourage drinking of distilled water. MEDICINAL. 1. Cleanse bowel at once with calomel or calomel and podophyllin, followed by a saline. To keep bowel clean, use phenolphthalein in tablet form or as syrup; one or two tablets every night sufficient, and later to be reduced in frequency. Foods like shredded wheat, also systematic deep breathing, will assist drugs. 2. Bile-salts, as cholagogue and to relieve such symptoms as offensive breath, coated tongue, etc. 3. Ferments, kept up several months. Alkalies where fat not well digested. 4. Intestinal antiseptics, as salol, naphthalene tetrachloride, some guaiacols, creosote, sulphocarbols, or agar soaked in hydrogen peroxide and flavored. 5. Where hyperchlorhydria, give eumydrin ($\frac{1}{65}$ grain or 0.001 gram *t. i. d.*), combined with sodium citrate. Where deficient gastric secretion, try suprarenal extract, or the old and well-known measures. 6. Tonics, especially at outset, avoiding strychnine. *Thayer and Turck.* 418

Intussusception. TREATMENT. Lateral anastomosis performed in 2 acute cases and advocated in preference to resection because of its comparative simplicity and safety. Tumor was found to disappear subsequent to operation. Not applicable, however, to gangrenous cases. *Parry.* 125

Iodine. As skin disinfectant. Some hours before operation field is shaved and painted with 10 or 12 per cent. tincture of iodine. Dry sterile dressing. Painting repeated on operating table. Author shaves and thoroughly cleanses skin 12 hours before iodine applied. Primary union in every case. *Jewett.* 63

Larynx, Fracture of. TREATMENT. Cases divided into three groups according to indications for tracheotomy: 1. Mild cases; fracture often incomplete and detected only on careful palpation. Keep patient under close watch. 2. Serious cases; marked dyspnoea, sometimes hæmoptysis. Immediate tracheotomy indicated. 3. Cases of intermediate severity. Preventive tracheotomy should be practised whenever patient cannot be kept constantly under watch. *Michel.* 351

Leprosy. TREATMENT. Oil of chaulmoogra is best given as a saponified preparation, in keratin-coated pills; the purified oil can also be injected in doses of 1 gram three times a week. Nastin injected in doses of 1 cubic centimeter gave good results. Great

persistence in treatment, even after relief of symptoms, found advisable. Local treatment by resorcin, hydrogen peroxide, ichthyol, thiosinamine, etc., and baths, also useful. *Kupffer.* Page 169

Leukæmia. TREATMENT. In leukæmia of essentially splenic type, Roentgen ray treatment, skillfully employed, is the most prompt and certain means of reducing leucocytosis, bettering anæmia and improving general health. Iron and arsenic still believed to have a place in the treatment. *Wilcox.* 387

Lupus Erythematosus. TREATMENT. Constitutional: regulation of diet to avoid overloading intestine; coffee or tea contra-indicated; quinine often useful. Local: in hyperæmic stage, cooling lotions and ointment of subacetate of lead, ichthyol lotion or ointment; in chronic cases, strong solution of ichthyol or iodine liniment; in severe conditions, linear scarification or light touches of thermocautery. High-frequency currents in subacute cases, Finsen light, X-rays or radium in chronic cases: particularly useful where thickening of the integument. *Morris.* 63

Malarial Fever. TREATMENT. Following measures found best in treatment of tropical malaria: In mild æstivo-autumnal infections, give 3 grains of calomel on admission, with 20 grains of quinine in solution or capsules. Follow calomel by salts next morning. Give 10 grains of quinine t. i. d. for a week, then reduce dosage to 5 or 10 grains per day. To relieve headache, ice-cap. On discharge patient is advised to take 10 or 15 grains of quinine once a week for a few weeks. In severe æstivo-autumnal infections, nausea and vomiting prevent administration of quinine by mouth; therefore give it hypodermically: Make skin of buttock surgically clean, boil needle and syringe but not quinine solution; plunge needle deeply into muscle at right angles to skin, and inject slowly. Close puncture wound with collodion. Abscesses very rare. Give 15 grains of quinine, hypodermically, every four hours up to 75 grains, or until vomiting has ceased. Sometimes after first or second injection all symptoms are relieved; stop injections and give 10 grains t. i. d. in solution or capsule. Tablets often not absorbed. *Shook.* 336

Meningitis. TREATMENT. Early relief from excessive intracranial pressure by means of lumbar puncture advocated in treatment of uncomplicated cases of all forms of meningitis, including tuberculous. Earliest possible recognition of pressure symptoms required, for which purpose total and differential leucocyte counts are of value. Four cases of meningitis reported (including one tuberculous), which recovered after lumbar puncture. *Hultgen.* 298

Meningitis, Cerebrospinal. TREATMENT. Case of an infant two months old reported, in which tapping of lateral ventricles and in-

traventricular injections of antimentingococcus serum led to complete recovery. *Fischer.* 129

Metrorrhagia. TREATMENT. Excessive menstrual discharge in young girls, due to blood changes, often arrested by following: Subcarbonate of iron, 0.10 gram ($1\frac{1}{2}$ grains); ergot (Bonjean), 0.05 gram ($\frac{1}{4}$ grain); quinine hydrobromide, 0.01 gram ($\frac{1}{10}$ grain); extract of belladonna, 0.005 gram ($\frac{1}{42}$ grain); two pills before meals. *Huchard and Fiesinger.* 298

Myasthenia Gastrica. TREATMENT. 1. Remove causative factors, as excesses or nerve-strain, if these are evident. 2. Exercise, either out-of-doors, or as special movements to strengthen abdominal muscles. Follow morning exercises with cold shower bath or plunge. 3. Rest in bed for a week, where muscular relaxation marked. If this not possible, use some form of abdominal support, as by Rose's belt of adhesive plaster, to be worn two weeks. 4. Gastric lavage with cool saline solution, not exceeding eight ounces. 5. Mixed diet, consisting of carbohydrates in the form of cereals, toast, rolls and crackers, and vegetables; proteids, as meats, eggs and milk; fats, as butter. Cooked fruits and a little ripe raw fruit allowable. Interdict sweets, and limit fluid intake to 6 ounces with each meal. Avoid overloading stomach at any given time; allowing three light supplementary meals daily, if necessary to secure this end. Patient should lie down for one hour after meals. In severe cases, rectal feeding for a few days. 6. Drugs. The best are strychnine phosphate, gr. $\frac{1}{40}$, extract of ergot, gr. j, extract of coca, gr. ij, extract of physostigma, gr. $\frac{1}{8}$, and hydrastin hydrochlorate, gr. $\frac{1}{4}$, taken fifteen minutes before meals. *Chace.* 356

Nævus. TREATMENT. Small, red, arterial nævi respond well to radium. Large, superficial, purple, capillary nævi indicate use of mercury quartz lamp. Mixed nævi of moderate size should be treated by both methods. Give not more than two or three exposures with radium, nor more than four or five with lamp. Time of application not to exceed one hour. Results better than with X-rays. *Kromayer.* 420

Nausea, Postanæsthetic. TREATMENT. Olive oil given by mouth in thirty cases of ether anæsthesia, after partial restoration of consciousness. In only one patient was nausea observed after its use. Where nausea had already begun it was at once checked by administration of the oil. *Graham.* 91

Nephritis, Acute. SURGICAL TREATMENT. Case of severe acute nephritis in a man 25 years of age, with no urine passed for 5 days, saved by decapsulation of both kidneys (Edebohl's operation). A few hours after operation both kidneys resumed function. *Karo.* 43

Nephritis in Childhood. TREATMENT. 1. Diet. For two days prohibit all food, giving

only 500 or 600 grams (1 pint or 20 ounces) of water, sweetened with table- or milk-sugar, daily. Then give 500 grams of milk and same amount of water. When condition becomes subacute, add carbohydrates, as preparations of flour, potatoes, etc. Add sugar to milk; when distasteful, dilute milk with Vichy, or give it alternately raw and boiled. Where milk diet not tolerated or results poor, try salt-free diet, omitting proteids and limiting milk to small amounts. Later, if no complications, lean ham, fresh pork, lamb and chicken may be given. Milk should not be taken with meals. 2. Rest in bed and avoidance of exposure. 3. Stimulate skin by general rubbings, gentle massage and tepid baths. Hot pack. 4. Dry cupping, wet cupping, or leeching over triangle of Petit. 5. Systematic disinfection of mouth, nasal fossæ and pharynx, and treatment of skin lesions as possible portals of infection. Where excretory insufficiency appears: 6. Hot air or vapor baths. 7. Drastic purgative, followed by laxative. When signs of intoxication appear: 8. Theobromine, 0.5 gram, at most 0.75 gram ($7\frac{1}{2}$ or $11\frac{1}{2}$ grains) at a dose in child of 10 to 13 years. Powdered squill, digitalis and scammony, 0.025 gram ($\frac{1}{8}$ grain) of each in a pill, given 2 or 3 times daily. If circulation weakens, digitalin or infusion of digitalis. Convallaria or convallamarin. Sparteine in the dose of 0.04 or 0.05 gram ($\frac{3}{4}$ or $\frac{1}{2}$ grain) in the 24 hours. *Hutinel.* Page 357

Nephritis, Chronic Interstitial. TREATMENT. 1. Diet. Fairly full diet combined with free elimination usually gives best results. A little meat with short fiber (as mutton, chicken) may be allowed at noon, and in morning or evening some fish; vegetable food, preferably farinaceous; milk freely; stimulants prohibited. Urine and general condition of patient should be watched in relation to diet. 2. Hygiene. Freedom from anxiety and overwork; moderate exercise; warm, dry and equable climate. 3. Physical measures. Free sudation by hot-air baths, vapor baths, or hydrotherapy, carefully avoiding renal congestion. 4. Drug therapy. Sodium iodide, gr. xv-xxx; sodium phosphate, gr. xxx-xlv; sodium chloride, gr. xc; water, Oij; to be taken freely as a drink. Purgatives. Where marked anemia: Basham's mixture or triple arsenates with nuclein. In failing compensation: digitalin combined with a vasodilator, as one of the nitrites (at first in small doses). Veratrine (0.5 milligrams or gr. $\frac{1}{134}$ every half hour until pulse relaxed) is a safe and effective vasodilator for continued use. In bad cases opium in small doses (2 to 4 minims of deodorized tincture) strengthens heart and dilates arterioles. When complications occur, stimulants, diuretics, purgatives and diaphoretics may be indicated. In dyspnea, quabrine hydrochlorate or aspidospermine valuable. *Butler.* 171

Neuralgia. TREATMENT. One to two grains of 1 : 1000 adrenalin ointment applied to skin over affected area in neuralgia and neuritis produces ischemia of the hyperæmic nerves and thus arrests pain. *Sajous.* 76

Neuritis, Multiple. TREATMENT. Subcutaneous injections of arsenic caused marked improvement or cure in 5 cases. Formula used: Sodium cacodylate, 1.5 grams (23 grains); cocaine hydrochloride, 0.1 gram ($1\frac{1}{2}$ grains); liquid phenol, 3 drops; distilled water ad 50 grams ($1\frac{1}{2}$ ounces). Began with 0.4 cubic centimeter (7 minims), dose injected being increased by 0.1 cubic centimeter (1½ minims) daily until 2.0 cubic centimeters (32 minims) reached; this amount continued for two weeks, then reduced gradually to 0.4 cubic centimeter. *Willige.* 421

Noma. ETIOLOGY. Ulcerative stomatitis offers a good soil for development of noma. A streptothrix is regularly present in noma, showing thick mycelium at edge of lesion with fine rods and spirilla extending into adjacent tissues. This organism is probably direct cause of noma. It is present already in the pregangrenous stage.

TREATMENT. Radical treatment is to be practised in pregangrenous stage; thorough use of actual cautery over ulcer and adjoining tissue. When ulcer spreads, best results are obtained by conservative measures: applications of hydrogen peroxide, pure alcohol, and potassium chlorate. General anæsthesia contraindicated because of danger of pulmonary infection; cauterization or removal of specimens can be done painlessly. *Neuhof.* 421

Obesity. TREATMENT. Strict vegetable diet for 4 to 6 weeks, then 150 to 200 grams of lean boiled meat 3 times a week or once daily. This diet kept up for months, and tends to protect from returning corpulence. If weight begins to increase, drop meat again for 4 to 6 weeks. Such diet best corrects obese tendencies without impairing general health. Supplement by exercises and hydrotherapeutic measures. *Albu.* 25

Osteomalacia. TREATMENT. In a case of non-puerperal osteomalacia, after two years in bed and failure of all other measures, suprarenal extract given according to Bossi's technique. From 8 to 10 injections of 1 cubic centimeter made each month. By the thirtieth injection great improvement was manifest, and in time the entire syndrome arrested, with almost complete restoration of function. *Bernard.* 92

Otitis Media, Chronic. TREATMENT. Perhydrol in 2 to 6 per cent. solution found useful. Patient drops solution into ear and remains on side for 10 minutes; auricle is then dried and cotton inserted in meatus. Where much suppuration, repeat morning and evening. Inspissated pus is dislodged, and cholesteatoma also yields. *Bresgen.* 125

In late stages:—If tube diseased: inflation,

with bougieing if stenosis exists. Intratympanic injections of menthol oil, iodine solutions, pilocarpine, menthol giving best results. Where fixation of the ossicles: pneumo-massage; injection of fibrolysin sometimes valuable. Operative measures: mobilization of the malleus, synechotomy and tenotomy of the tensor tympani, eventual excision of the malleus and incus. *Yearsley.* Page 61

Case of subacute otitis media, complicated by suppurations of ethmoid sinus, in which hexamethylenamin (5 grains t. i. d.) caused rapid and marked improvement. *E. J. Brown.* 353

Antiseptic vapors of kelvolin, a dark, oily liquid, used in treatment of septic conditions of tympanum, attic and mastoid antrum and cells; it is forced into these cavities by means of a special volatilizing inflator inserted into the external meatus or adapted to a Eustachian catheter. Anæsthetic property of the vapor precludes pain from heat liberated. Meatus and tympanic cavity to be carefully cleansed and dried before introducing the vapor. Treatment usually given every third day. Causes rapid diminution of discharge, improvement in hearing and in general condition. *Stuart-Low.* 362

Pelvic Inflammation. TREATMENT. Abscess. Simple vaginal incision with drainage; if condition becomes worse, abdominal section, by extraperitoneal method if possible, should be attempted. *Esch.* 62

Hot mud compresses over abdomen recommended in chronic exudative adnexal inflammations and pelvic exudates. The heat is much better borne than in hot-water applications, and 10° C. greater heat can be applied. If surface be covered with woolen cloths, heat retained for several hours. Causes hyperæmia and promotes removal of exudate. Contraindicated in acute cases. *Cukor.* 63

Pemphigus. TREATMENT. Quinine in large doses used in two severe cases with pronounced benefit. One patient was given 23 grains daily for two weeks, then 31 grains daily. No tinnitus, vertigo or vomiting resulted. *Bergrath.* 230

Pericarditis. ETIOLOGY. Myocardial degeneration, leading to dilatation, predisposes to pericarditis. Overaction of heart may induce pericardial inflammation. Chronic adhesive pericarditis frequent but often impossible of diagnosis, serious symptoms arising only when myocardium itself is diseased. *Brooks and Lippencott.* 26

Peritonitis. PROGNOSIS. Degree of improvement in circulation caused by intravenous saline infusion is an index of the extent of vasomotor paralysis, the effect persisting in proportion to recuperative power of vessels. If infusion causes no circulatory improvement little benefit can be anticipated from operation. *Lichtenberg.* 126

TREATMENT. Restrict the amount of tamponing and never insert a tampon between loops of intestine. Fowler position always exerts favorable influence. *Dege.* 64

Measures recommended for inhibition of peritonitis: 1. Gastric lavage immediately, where nausea, vomiting or gaseous distention (except where peritonitis follows perforation of stomach or duodenum). 2. Rectal instillation of normal saline by drop method, continuing for 1 to 2 hours, then interrupting for 2 hours. Where this method not practicable, give 500 to 1000 cubic centimeters of saline solution subcutaneously, repeating as required to relieve thirst and keep vessels filled. 3. Fowler position. 4. Large, hot, moist dressing of saturated boric acid solution and alcohol in equal parts applied to abdomen. 5. Give no cathartics or food by mouth; even prohibit water till patient on way to recovery. Feed by enemata consisting of 1 ounce of concentrated liquid food in 3 ounces of normal saline; add 10 to 50 drops of deodorized tincture of opium to each feeding till no longer painful. Administer slowly every 3 or 4 hours through rubber catheter introduced not more than 3 inches. *A. J. Ochsner.* 360

Peritonitis, Tuberculous. TREATMENT. Air injected in peritoneal cavity after paracentesis in three cases of the exudative type, with recovery. After removal of exudate by trocar, air is forced in by emptying water from a large syringe into the aspirator jar. *Florio.* 238

Phenolphthalein. Acts in about 6 hours and has no constipating after-effect. Sometimes loses its effect on continued use, and may cause diarrhœa. Dose: 3 to 5 grains t.i.d., in powder, pill or capsule. Five grains are probably the largest safe dose. In a child, begin with ½ grain. *Gilbride.* 172

Placenta, Premature Detachment of Normally Situated. TREATMENT. Rupture of membranes and rapid delivery not to be done till uterus contracting, patient rallied, and os somewhat dilated. Where no contractions, no dilatation, and patient in collapse, use tampon and binder until patient and uterus have recovered. This enables uterus to withstand pressure of blood within it and so controls hæmorrhage. *Goldstine.* 300

Pleural and other Effusions. TREATMENT. To prevent recurrence, after aspiration, of serous effusions into the pleura, peritoneum, tunica vaginalis, etc., 8 minims to 2 drams (according to size of cavity) of suprarenalin or adrenalin in four times the quantity of saline solution may be injected into the cavity. *Sajous.* 76

Strong galvanic currents employed in serous effusions, using as positive electrode a cotton wad soaked in 10 per cent. sodium bicarbonate solution and as negative electrode one soaked in 5 per cent. tartaric acid. Daily applications of one hour, with current

of 15 or 20 milliampères, gradually and cautiously increased up to 50 or 60. Fluid promptly reabsorbed in many cases of peritoneal, pleuritic and even pericardial effusion. *De Renzi.* Page 234

Pneumonia. TREATMENT. Venesection recommended in cases with signs of progressive dilatation of right heart, even where patient far from robust. Always gives some relief and is often followed by recovery if done before right heart too greatly distended. If full stream of blood can be obtained, 6 to 10 ounces will suffice, and bleeding may be repeated in thirty-six to forty-eight hours if necessary. If stream small, little good results, because tension lowered too slowly. *McPhedran.* 332

Poliomyelitis, Epidemic. PROPHYLAXIS. Nasal and buccal secretions should be disinfected. *Flechner and Lewis.* 231

Puerperal Infection. LOCAL TREATMENT. In ulcerative endometritis, vaginal douching and drainage of uterine cavity. Where retained material with normal temperature, or where serious hæmorrhage, prompt evacuation of uterine cavity. Where moderate fever and general condition good, delay interference a few days to a week, awaiting spontaneous evacuation. Where high fever or severe toxic symptoms, especially if virulent streptococci in vaginal discharges, curet. If symptoms of extra-uterine infection, strictly avoid curettage (unless serious hæmorrhage). Curettage, where indicated, best done with finger. *Winter.* 300

Pyelitis in Infants. DIAGNOSIS. Of 9 cases in children ranging in age from 9 months to 2½ years, 6 had high fever; 5, frequent micturition; 3, chills; 1, pain, and 1, tenderness in lumbar region. None vomited. Diagnosis depends on urinary findings: pus, epithelial cells, occasionally blood-corpuscles, and no casts.

TREATMENT. Urotropin, ½ to ¾ grain every two hours, very effective. *Gray.* 174

Pyloric Spasm of Infants. TREATMENT. High rectal instillations of Ringer's fluid (sodium chloride, 7.5 grams; potassium chloride, 0.42 gram; calcium chloride, 0.24 gram; boiled water, 1 liter) gave good results. Half a liter of solution is introduced in 2 hours, and the procedure repeated morning and evening. Vomiting ceases after a few days' treatment. *Rosenstern.* 232

Pyloric Stenosis, Congenital. TREATMENT. Fat-free feedings advocated, vomiting and hyperperistalsis having thereby been caused to subside in 2 cases. First give a tapioca preparation, alternating with a suspension of flour in water; then give latter alone. Flour employed to contain not over 5 per cent. fat. Add occasional nutrient enemata of albumose and sugar to keep up infant's weight. After several days return to normal amount of food—more or less gradually, according to severity of case. *Nolf.* 424

Radium. Permanent radium emanations can be established in certain organs, the blood, or the whole body, at will, by injecting finely divided radium sulphate suspended in saline solution isotonic with blood. Therapeutic results obtained: 1. Relief of pain in malignant growths, deep infections, tuberculous meningitis, etc. 2. Diminished inflammatory œdema around malignant growths, tuberculous lesions, infected glands, etc. 3. Occasionally general improvement in tuberculous patients. 4. Retrogression of benign growths, as keloids. *Dominici.* 361

Rheumatic Heart Disease. DIAGNOSIS in children. 1. Subcutaneous nodules generally indicate active cardiac disease. 2. Evening fever without previous cause suggests fresh cardiac inflammation. 3. Joint pains. 4. Sudden appearance or increase in anæmia. 5. Persistently frequent pulse. *Carr.* 26

Rheumatism. DIAGNOSIS. Enlargement of thyroid gland claimed to be a diagnostic sign of rheumatism in children. Whenever it is present in childhood, presence of rheumatism should be inquired into. *Clemens.* 482

Septicæmia. TREATMENT. In the presence of persistently low blood-pressure, hypothermia, and cyanosis, adrenalin is valuable when very slowly administered intravenously in the proportion of 5 minims of the 1:1000 solution to a pint of warm saline solution (105° F.). It enhances pulmonary and tissue respiration and the activity of the immunizing process. *Sajous.* 75

Collargol found valuable in septicæmia and pyæmia of medium gravity, as well as in obstinate febrile states due to reabsorption of toxins and associated with anæmia. Should be given in all cases of puerperal infection. It is best administered by slow intravenous injection of 1 to 2 c.c. of a 5 or 10 per cent. suspension. Probably acts as a catalytic, accelerating oxidation. *Albrecht.* 234

Shock. TREATMENT. Suprarenalin or adrenalin, very slowly administered intravenously; 5 minims of the 1:1000 solution to the pint of warm saline solution (105° F.). In urgent cases, 10 drops may be given in 1 dram of saline solution. Artificial respiration hastens effects. *Sajous.* 75

Shock, Postoperative. PROPHYLAXIS. Pituitary extract (1 cubic centimeter of 20-per-cent. solution of posterior lobe) was injected in three cases before complete recovery from the anæsthetic, in conjunction with normal saline by rectum. The pulse, previously barely perceptible, almost at once became large and bounding, slow, and regular, this effect lasting 12 to 16 hours. *Wray.* 93

TREATMENT. In shock after abdominal operations, remove two skin-sutures near navel and insert glass tube joined by rubber tubing to receptacle containing saline solution at 112° F. Pass the tube upward beneath omentum and transverse mesocolon

to region of solar plexus, and run in one pint of hot saline, causing rise of blood-pressure by heat and pressure stimulation of sympathetic system. Remove tube, cover wound with gauze, and apply binder to sustain pressure. Inject 10 ounces of hot saline in rectum every 2 hours. *Hopkins*. Page 159

Sinus Disease. TREATMENT. Case of chronic suppuration of antrum in which the discharge and subjective symptoms were greatly relieved by 5-grain doses of hexamethylenamin three times daily. *E. J. Brown*. 353

Skin Growths and Ulcerations. TREATMENT. Powdered potassium permanganate used as a caustic for benign and malignant neoplasms, lupus, keloids, chaneroids, cavernous angiomas, etc. Surrounding healthy skin is protected by rings of adhesive plaster piled one over the other, with central opening slightly larger than area to be cauterized. Powdered permanganate is then poured in and covered over with adhesive. After 48 hours, a softened mass alone remains of the growth. Upon removing this a sharply-defined depression is revealed, which heals rapidly. The procedure is usually painless. *Finck*. 232

Suprarenin. Poisonous dose varies with the individual. Danger arises from: 1. Concentration of solution used. Large amount of a weak solution is without danger. 2. Method of introduction. Intravenous injection gives immediate bad effect; locally or subcutaneously it is well borne. Author employs solution of 0.64 gram suprarenin borate in 100 cubic centimeters of 0.5 per cent. novocaine, made up fresh from tablets for each operation; 125 cubic centimeters of such solution used without danger. *Braun*. 127

Syphilis. TREATMENT. Mercuro found useful to alternate with the protiodide and in cases where the ordinary preparations of mercury cannot be assimilated; gr. j three or four times daily. Author advocates course of twenty inunctions of the official ung. hydrarg. at the outset of every case of syphilis, before beginning internal administration. Where latter causes serious gastro-intestinal disturbance, and the symptoms of the disease are marked, inunction treatment is to be adopted. Course of three weeks of inunctions in the spring and fall for four or five years recommended. In cases of ulcerating tubercular syphilitic dermatitis and gummata best results obtained using potassium iodide (gr. x-xx *t.i.d.*) along with mercurial inunctions twice daily. Mercury is as valuable in tertiary as in secondary syphilis. *Christian*. 45

Tabes. TREATMENT. Strychnine in gradually increasing doses arrested progress of the condition in almost all cases. Begin with $\frac{1}{40}$ grain *t.i.d.*, increase to $\frac{1}{20}$ at end of first week, to $\frac{1}{10}$ at end of second, then add one drop of a solution of 1 grain of strychnine in 1 ounce of water. Increase by a drop every day till total dose is $\frac{1}{8}$ grain *t.i.d.*, which is

maintained for 3 months. Then increase as before until $\frac{3}{16}$ is reached, maintain for 3 months, etc. Maximum dose of $\frac{1}{2}$ grain being reached, it is maintained for a year, then gradually reduced. Results obtained: pains disappeared, bladder and bowel control regained, locomotion much improved; general amelioration. *Hammond*. 236

Tetanus. PROPHYLAXIS. While 1500 units of antitoxin will prevent tetanus in wounds without severe mixed infection, it may fail when used only once when there is mixed infection lasting over 10 days. In such cases antitoxin should be repeated every week while infection lasts. *Rowan*. 364

Tetany. TREATMENT. Infundibular extract (20 per cent.) of Burroughs, Wellcome & Co., recommended; given by intramuscular injection in doses of 7 drops *t.i.d.*, or oftener. If used subcutaneously it might cause necrosis of skin by vasoconstriction. Not poisonous. *Ott and Scott*. 99

Tetany, Gastric. TREATMENT. Soluble calcium salts rapidly control symptoms in the tetany of gastrectasis; continued use required. Large saline infusions, as well as parathyroid preparations (nucleoproteid) by the mouth, are but slightly effective. *Kinnicutt*. 123

Tic. DIAGNOSIS. True tic, which is of psychic origin, and is a sequel to the unhindered repetition of a once voluntary purposive act, is distinguished from spasm, which is due to irritation of any reflex arc of the bulbospinal tract, as follows: 1. Movement slower. 2. Occurs in volleys. 3. No muscular weakness. 4. Reflexes normal. 5. Painless. 6. Disappears in sleep. 7. Pseudo-coördinate and intentional. 8. Influenced by volition or emotion, and followed by satisfaction. Upon this distinction depends whether treatment shall be surgical, medical or psychotherapeutic. *T. A. Williams*. 5

Toxæmia of Pregnancy. TREATMENT. Failure of thyroid gland to hypertrophy during pregnancy probably related to toxæmia. Administration of thyroid beneficial by supplying this deficiency and by diuretic action. Saline extract of fresh human thyroid proteids more rapid and reliable in action than ordinary sheep thyroids. Hypodermic use of thyroid proteids greatly superior to oral use. *Ward, Jr.* 27

Traumatic Neurosis. DIAGNOSIS. In response to galvanism the anodic closure contraction equals or surpasses the cathodic closure contraction, as in the reaction of degeneration, but in tracings of muscular contractions the peaks are not rounded as in the reaction of degeneration, but sharp and angular as with normal contractions. Increased excitability is observed on both affected and sound sides. *Larat*. 124

Tuberculosis of Bladder. TREATMENT. 1. General hygiene. 2. Internally, 5 grains of guaiacol carbonate *t. i. d.* 3. Locally, instill into bladder every other day 20 drops of 20

per cent. iodoform emulsion in liquid alboline, with deep urethral syringe. *Christian*.
Page 417

Tuberculosis of Larynx. TREATMENT. Case with marked infiltration of epiglottis and aryepiglottic folds, and ulceration of one vocal cord, in which three applications of galvanocautery led to recovery. Powder of anæsthesin and orthoform, equal parts, inhaled into larynx for pain. *D. Grant*.
426

Tuberculosis, Pulmonary. DIAGNOSIS. X-ray method contributes to early diagnosis. Where symptoms point to pulmonary lesion but no physical signs are demonstrable, radiography may show peribronchial infiltration or enlarged bronchial glands. Later, consolidated areas and cavities can be accurately located at any depth within the lung. *Leonard*.
177

TREATMENT. Mercury succinimide administered hypodermically in 8 cases caused general improvement and appeared to exert a marked controlling influence over the tuberculous process. *Freeman*.
90

Beechwood creosote given both internally and by inhalation affords much relief to symptoms in nearly all cases and in all stages. It is also valuable as a preventive in those predisposed or exposed to the infection. Rest, fresh air, proper food, with or without lime salts. *Beverley Robinson*.
23

Menthol ointment (30 or 40 per cent.) used with benefit. It is rubbed in daily for 10 minutes, skin of back, chest and thighs being successively employed. Improvement manifest alike in symptoms and physical signs. Probably acts directly on involved tissues. Treatment should be persisted in for 4 months or more. Also valuable in old fibroid pneumonias. *Stepp*.
238

Early tuberculosis treated by antiseptic inhalations with remarkable results. Solution used: Phenol, creosote, spirits of chloroform, of each 8 cubic centimeters (f3ij); tincture of iodine, spirits of ether, of each 4 cubic centimeters (f3j). Of this 6 to 8 drops are poured on the felt or sponge of Yeo's perforated zinc inhaler, and inhaled regularly every hour in the daytime, as well as 2 or 3 times during the night, when patient is awake. Cough is thereby relieved without sedatives and expectoration facilitated. Where hæmoptysis, add turpentine to the solution. In all cases patient should rest in bed for a week, with windows of bed-room open. In second week he may rise for an hour or two daily, and later walk in the open air every morning. When temperature is normal, use of inhaler may be gradually left off. *Lees*.
93

Two cases distinctly improved in all respects by treatment with thymus gland; 30 to 120 grains three or four times daily. Author uses fresh thymus of calves, dried by himself. *Gueyer*.
424

Tuberculosis, Superficial. TREATMENT. Mercury succinimide (gr. $\frac{1}{2}$ subcutaneously

every other day) with mercury protiodide (gr. $\frac{1}{4}$ by mouth *t.i.d.*) gave good results in two obstinate cases of scrofuloderma and one of pharyngeal infiltration. Curetting, cauterization and X-rays ineffective until mercury added. *Hertzberg*.
25

Typhoid Fever. **INTESTINAL PERFORATION.** Mortality after operation for perforation in children is below 50 per cent.—25 per cent. lower than in adults. *Jopson and Gittings*.
25

TREATMENT. Alcohol compresses to the abdomen in children advocated in preference to the cold tub-bath treatment, which author regards as favoring hæmorrhage or perforation and as liable to work injury to the heart. Compresses used in 12 severe cases which were rendered milder. Pad of absorbent cotton or eight thicknesses of gauze wrung out in 85 per cent. alcohol (90 per cent. for adults), applied to abdomen, covered with cold-water gauze compress, and held in place by flannel band. Water compress renewed every hour, alcohol compress every 2 hours. Acts by local active hyperæmia, while alcohol absorbed stimulates heart. Used also in peritonitis and appendicitis with benefit. *Cheinissee*.
122

Ulcer of Leg, Syphilitic. TREATMENT. Reduce alcohol consumed. Mercury and iodides, preferably organic iodides, well diluted, alternated with courses of strychnine particularly when ulcer again becomes sluggish. General antiseptic application: Boroglyceride 3j, hot water Oss. Locally, black or yellow wash; solution of phenol (1 to 100); tincture of iodine (1 to 4 or 5 of hot water); ammoniated mercury or yellow oxide ointments. Dry treatment: Zinc oxide 3iij, calomel, 3ss, infusorial earth q. s. ad. 3j. X-rays have benefited some cases. Where ulcer resists cure due to tethering of its edge to underlying bone, apply antiseptic fomentations, scrape ulcerated surface with Volkmann's sharp spoon, undercut edges with scalpel, and draw them together, freshening skin-margins. *W. Evans*.
23

Uncinariasis. DIAGNOSIS. In mild cases eosinophilia is often not available for diagnosis. Following method recommended: Dilute fecal material ten times with water and centrifugate at high speed for 6 or 8 seconds. Pour off supernatant fluid, shake sediment with water, and centrifugate again just long enough to throw eggs to bottom (usually 2 seconds). Repeat once or twice, remove sediment with pipette and examine for eggs. Calcium chloride solution assists in removal of debris. Large amounts of feces may have to be examined before eggs discovered. *Bass*.
168

Varicocele. PROGNOSIS. Investigation of results of operation in 39 cases. Data obtained one to ten years after operation. Thirty-six per cent. still had pain in testicle or groin, 31 per cent. tenderness in testicle. 27 per cent. sexual hypochondriasis. No atrophy of testis due to operation. Recur-

rence in 6 per cent. Operation acknowledged distinctly beneficial in 80 per cent. *Barney.* Page 427

Vomiting in Infants. TREATMENT. Condition often a mere habit, vomiting reflex being established owing to former injudicious feeding. Administer chloral, bromide or chlorotone until habit is broken; or better, exhaust the vomiting center by giving harmless emetic, as wine of ipecac and carbonate of ammonium, half an hour before feeding. Latter method used in 55 cases; immediate cure in 30, and improvement in 10. *Pritchard.* 239

Vomiting of Pregnancy. TREATMENT. Adrenalin used with success in a case previously uncontrollable. Ten drops of 1 to 1,000 adrenalin solution given morning and night, at first in enema of 150 grams (5 ounces) water with 20 drops of laudanum, after 3 days in ice-water by the mouth. Nutrient enemata also given. Vomiting ceased on second day, and on third patient could retain a little food. Recurrence of nausea toward end of pregnancy relieved by 10 drops daily for 5 days. *Rebaudi.* 94

Vomiting, Postoperative. TREATMENT. Where nausea, vomiting or gaseous distention after abdominal section, employ gastric lav-

age, which often checks incipient peritonitis. Spray pharynx with 2 per cent. cocaine solution 10 minutes before tube introduced. *A. J. Ochsner.* 360

Wassermann Reaction. Positive reaction often noted in cases of leprosy giving no history or symptoms of syphilis, chiefly in the tubercular and mixed forms of the disease (31 out of 38). In cases of the maculo-anæsthetic and purely trophic type it is usually negative (3 positive out of 22). *H. Fox.* 355

Whooping-Cough. TREATMENT. Oxygen used in 30 cases. It is given at each paroxysm. Cyanosis subsides and suffocation is prevented. Child keeps in good condition with appetite throughout. It is best inhaled through a funnel; 10 to 12 liters necessary to control a paroxysm. Where broncho-pneumonia threatens, oxygen should be inhaled every hour; it renders lung aseptic. *Weil.* 64

Quinine salve applied to nasal mucous membrane with benefit. Used 1 to 2½ grams of quinine in 10 to 15 grams of lard (30 grains to 2 drams in 1 ounce), and introduced piece of salve size of pea into each nostril 3 to 4 times daily with glass rod, head being thrown back. Symptoms much improved after 3 or 4 days. Especially effective in very young children. *Berliner.* 301

Book Reviews

A TEXT-BOOK OF THE PRACTICE OF MEDICINE. By James M. Anders, M.D., Ph.D., LL.D., Professor of the Theory and Practice of Medicine and of Clinical Medicine, Medico-Chirurgical College, Philadelphia. Ninth Revised Edition. Octavo of 1326 Pages, fully Illustrated. Philadelphia and London: W. B. Saunders Company, 1909. Cloth, \$5.50, net; Half-morocco, \$7.00, net.

The ninth edition of Anders's text-book has been greatly improved by the exclusion of more or less obsolete material and the addition of much that is new and of real value. This has enabled the author to bring the work up-to-date without materially increasing its size.

Controversial points have not, as a rule, been taken into account, the aim being to dwell on the practical aspects of medical affections. The work being mainly intended for students and practitioners, the methods of treatment have been limited to those most widely accepted, together with such as have been found most serviceable by the author. From the viewpoint of the therapist, Anders's text-book is far superior to Osler's.

Among the disorders newly discussed in this edition are: Fourth disease, filaria philippinensis, chronic purpura, leukanæmia, acute pneumokoniosis, gastromyorrhæa, essential hæmaturia, the Rose-Bradford kidney, hereditary cerebellar ataxia (Marie and Nonne), myastonia congenita, adiposis tuberosa simplex and sun-traumatism. This serves to illustrate the scope of Anders's "Practice," which is entitled to high commendation.—C. E. DE M. S.

EUGENICS, the Science of Human Improvement by Better Breeding. By C. B. Davenport, Carnegie Institution of Washington; Director Department of Experimental Evolution, Cold Spring Harbor, N. Y.; Secretary Committee on Eugenics, American Breeders' Association. Pp. 35. New York: Henry Holt & Co., 1910. Cloth, 50 cents, net.

This little book includes two essays which the reviewer had the pleasure of hearing read by the author, and which impressed him by reason of their concise, elucidating presentation of the subject. Here we have an epitome of a subject which it is eminently necessary for medical men to have clearly before the mind. The illustrative diagrams are most useful. In

the book is set forth a great duty, which falls upon physicians, clergymen, philanthropists, and all those who assume to be teachers of human conduct. The immediate necessity for appropriate legislation is shown. This can only be had by the formation of opinion, which, in turn, should be based upon exact findings, and not, as hitherto, respecting this great problem of heredity, upon a mere mass of conjecture.—J. M. T.

MYOMATA OF THE UTERUS. By Howard A. Kelly, M.D., Professor of Gynecology in the Johns Hopkins University, and Thomas S. Cullen, M.B., Associate Professor of Gynecology, Johns Hopkins University. Large Octavo of xx + 723 Pages, with 388 Original Illustrations by August Horn and Hermann Becker. Philadelphia and London: W. B. Saunders Company, 1909. Cloth, \$7.50, net; Half-morocco, \$9.00, net.

One thousand, six hundred and seventy-four cases of uterine myoma, constituting the operative experience of the authors in this condition for a period of twenty years, make up the material upon which this superb monograph is based. Of these cases, approximately, nine hundred are described, more or less, fully in the text. The history and pathological findings of every case were carefully analyzed, and the points of interest noted on cards. The cards were then classified under certain main headings, which later served as headings for the thirty-five chapters in the book. The amount of material was so great that the authors found it inexpedient to review the current literature on the subject and confined their efforts to the investigation of their own cases.

The first two-thirds of the book is devoted to a detailed consideration of the various pathological aspects of uterine myoma. The following chapter headings will indicate some of the matters discussed: Parasitic uterine myomata, cervical myomata, submucous myomata, torsion of the uterus, hyaline and cystic degeneration, suppurating myomata, carcinoma of the cervix associated with myoma, conditions of the tubes and ovaries, uterine ligaments, bladder, in cases of myomata, etc. In each chapter the histories of cases illustrating the condition discussed are reported, and the pathological findings strikingly shown by means of numerous drawings and plates, most of which, in quality, have never been surpassed, we believe, in any medical work. The work is thus, in a sense, a vast storehouse of clinical observations, from which can be deduced, after judicious combination and comparison of the observed facts, many valuable conclusions relating to the symptomatology, diagnosis, and treatment of myomata. A point well brought out by the observations recorded is the relative frequency of malignant degeneration in myomatous tumors. In a number of cases a second more detailed examination of the pathological specimens revealed sarcomatous changes which had previously been overlooked; the malignant changes subsequently found in the stump and which led to a fatal ending in these patients are thus shown to have been already present at the time of the first operation. Another conclusion of practical importance is that myomata do not cause menstrual disturbances unless the outline of the uterine cavity is changed and the mucosa impinged upon.

The last third of the work is devoted to the symptomatology, differential diagnosis, and treatment of myomata, and to a very carefully prepared index. Under operative treatment we find that the authors limit themselves to a discussion of the procedures they have personally employed. That their mortality in the last 238 cases operated was reduced to less than 1 per cent. is ample evidence, however, of the success with which these procedures, carefully executed, can be attended. In common with many other specialists, the authors consider supravaginal hysterectomy as the operation of choice, providing no traces of malignant degeneration can be found in the tissues removed.

On the whole, the authors are to be congratulated on the completion of this comprehensive work, which will long stand as a monument to their indefatigable industry. It cannot but prove of great value to both general practitioners and gynecologists as a work of reference, being a careful record of the observations of its experienced authors. The publishers are commended for the care bestowed on the mechanical preparation of this volume.—L. T. DE M. S.

HAND-BOOK OF DISEASES OF THE RECTUM. By Louis J. Hirschman, M.D., Lecturer on Rectal Surgery and Clinical Professor of Proctology in the Detroit College of Medicine; Attending Proctologist in Harper Hospital; Fellow of the American Proctologic Society, etc. Octavo of 374 Pages, with 147 Illustrations, mostly original, including 2 Colored Plates. St. Louis: C. V. Mosby Medical Book & Publishing Co., 1909. Cloth, \$4.00.

The author of this work is rightly of the opinion that many of the cases of rectal and anal disease referred to the specialist and to the general surgeon could be satisfactorily treated

in the office of the general practitioner. Not only is this generous attitude praiseworthy, but the author has so clearly and accurately described and illustrates so well the disorders he relegates to the general physician that we bespeak for the book a large sale.

The work will also, indirectly, prove of great value to the sufferers from this class of diseases, because it emphasizes the necessity of rectal examination of many cases which proceed from bad to worse without it—rectal cancer, for instance, so frequently treated for chronic diarrhœa during its early stages. The author urges, too, that irritability of the bladder, sciatica, and constipation always call for a rectal examination. To facilitate all this work and also the treatment of hæmorrhoids, anal fissure, perineal abscess, and other disorders commonly met with, he describes in detail the various methods of inducing local anæsthesia.

On the whole, it gives us pleasure to endorse Dr. Hirschman's book. It is one of the best of its kind available.—C. E. DE M. S.

MEDICAL GYNECOLOGY. By Samuel Wyllis Bandler, M.D., Fellow of the Association of American Obstetricians and Gynecologists; Adjunct Professor of Diseases of Women, New York Post-Graduate Medical School and Hospital. Second Revised Edition. Octavo of 698 Pages, with Original Illustrations. Philadelphia and London: W. B. Saunders Company, 1909. Cloth, \$5.00.

One might almost say that we have had a surfeit of works on gynæcology in recent years, but Dr. Bandler's book commands attention owing to the fact that it treats the subject from the standpoint of the practising physician rather than from that of the operating specialist, thus facilitating greatly the efforts of the former in this line of work.

Considerable space is devoted to a consideration of venereal disease in females, and such disorders as amenorrhœa, dysmenorrhœa, sterility, uterine hæmorrhages, pruritus, disturbances at the menopause, and others so commonly met with in everyday practice are studied in detail, the therapeutics of these conditions being given in full. A useful section on constipation is contributed by Dr. George B. Mannheimer, who shows great proficiency in his handling of the subject. We can warmly recommend Dr. Bandler's work.—L. T. DE M. S.

PRACTICAL DIETETICS, with Reference to Diet in Disease. By Alida Frances Pattee, Graduate of the Department of Household Arts, State Normal School, Framingham, Mass.; Late Instructor in Dietetics, Bellevue Training School for Nurses, New York City. Fifth Edition. Pp. xvi + 312. Mount Vernon, N. Y.: A. F. Pattee. Cloth, \$1.00, net.

The continued popularity of this book is shown by the fact that an edition of ten thousand copies is being issued annually. The text is very practical in arrangement, containing a large number of recipes, always easy of preparation, and in sufficient variety to insure an ample choice under all conditions. The preparation of food for the sick and convalescent is fully described, and the methods of administering liquid, semi-liquid and solid food given in detail. A portion of the book is devoted to the dietetic management of special diseases, based on the standard works of medical writers on this subject. Diet in infancy is also considered. On the whole, it is a most useful work, both for the physician, as a reference book on diet, and for the nurse, as a guide in cooking for the sick. Its chief advantages may be summed up as simplicity, conciseness, and completeness.—L. T. DE M. S.

HANDBOOK OF THERAPY. Pp. 421. Chicago: American Medical Association, 1910. Cloth, \$1.50.

This little book, of convenient size for carrying in a coat-pocket, is a reproduction of the series of articles on the treatment of disease that have appeared in *The Journal of the American Medical Association* under the auspices of its Therapeutic Department. Though including hints upon a large number of affections, it does not pretend to cover the whole field. What has been presented, however, cannot but prove of great service to the general practitioner, for whom it is intended. It contains a list of the new and non-official remedies approved by the Council on Pharmacy and Chemistry, as well as miscellaneous tables, which will be found useful for reference.—L. T. DE M. S.

[End of Editorial Department.]

The General Field

The Depressing Physical Effects of Noise

While the lumber supply is, according to various authorities, becoming less and less, there is one use for the products of the forest, for which there can be no practical substitute, viz.: wood pavement.

It has been recognized by neurologists for a long time that one of the most prolific causes of premature breakdown among urban dwellers is the omnipresent and soul-racking city noises.

While this fact may not have figured specially in the decision to make use of wood pavements, it, however, has received recognition by municipal authorities. There is, in fact, a very gratifying advance being made in the proper equipment of the city streets.

A procession of wagons rattling over belgian blocks in a narrow street produces a constant irritation upon the nerves of all pedestrians and also upon those in the adjacent buildings who are near enough to open windows to get the effects.

The New York woman who had the courage of her convictions sufficient to go after the tugboat people, who were in the habit of blowing their whistles in the middle of the night as signals to employees on the shores, deserves the thanks of successive generations for her success in procuring the legislation sufficient to suppress the nuisance.

General Practitioner or Optician

A large number of people who realize that they have some defect of vision, nevertheless, will not go to an oculist of high prices. In many instances it is not

convenient, as there are no oculists within a convenient reach and in many other instances they won't go because of the expense. It therefore comes down to a choice between the family doctor who ought to be competent to attend to ordinary small jobs of fitting of glasses, and the optician who is willing to do the work whether he is competent or not. There has been a great deal of discussion along this line and it is a healthy indication.

The sale of cheap quack remedies in the grocery stores has within recent years declined to a very large extent. Entirely consistent with this improvement is the expectation that the general public will within a very short space of time become wary of the average optician. The family doctor should be perfectly able to make these adjustments—to correct the ordinary errors of vision. There is good literature to be had on this subject, and, if that is not sufficient, special study should be made under the direction of some competent person.

The general practitioner, if equipped to do ordinary eye work, is likely to be able to refer a great number of cases to the high-grade oculists, who, in turn, on the principle of a square deal, should refer simple cases back to the general practitioner and assist the general practitioner in every way in his acquiring familiarity with that class of work.

The Exalted Ego

A prominent Eastern railroad became involved in a labor war with its employees a few weeks ago and succeeded in making a settlement which was not advantageous to the employees.

In consequence, the road is now em-

playing a great many green men as train crews and their loss account due to successive wrecks resulting from the inexperience of these men is reaching a very high figure.

When a manufacturing plant has a quarrel with their employees and there is a large slump in the amount of their output, it concerns the consuming public in an indirect way, but, when a railroad company through a case of self-esteem on the part of the manager is so unfortunate as to lose a good portion of its trained employees, it not only concerns the stockholders of the road but it concerns the traveling public as well.

There is something un-American about the idea of a compulsory arbitration board, but colossal egotism on the part of a railway manager always suggests it as the lesser of two evils.

Treatment of Rheumatism by Bee-Stings.

Owing to the liberality with which new medical ideas are supplied to a somewhat weary profession, it is not surprising that the enthusiast, who a few years ago recommended bee-stings as a cure for rheumatism, should have failed to inoculate his professional associates with any great amount of enthusiasm. It seems, however, that an English physician, Dr. Maberley, allowed this suggestion to find lodgment in his mind, and he has been experimenting in a quiet way for a series of years.

Dr. Maberley, according to the *Medical Record*, has reported a new series of experiments to the *London Lancet*, and is convinced that this mode of treatment possesses great merit. It is not surprising to learn from this report that even the most resigned patient is not ready to receive more than a half dozen stings on the first application, although later on,

through an acquired resignation to his fate, it is possible to apply a couple of dozen. In order to secure the best results the bees' stings should be allowed to remain in the skin a few minutes before removing them.

In view of the excellent work now being done in chemical laboratories it might be supposed that a way could be discovered to apply this therapeutic agent in a less painful manner. This method seems somehow to bring to mind the original mode of securing roast pig, according to the famous essay of Charles Lamb.

Plenty of Pure Air on the Farm

Bacteriologists have in recent years devised means by which they can filter the atmosphere and acquire a very fair understanding as to the degree of contamination which it contains.

The present era seems to provide a very timely opportunity for a general campaign of education as to the dangers of breathing an unwholesome city atmosphere.

The question of a food supply for the rapidly increasing millions is getting to be a pressing one. A recent speaker at the Conservation Congress declares that the production of wheat per acre in the United States, notwithstanding the newness of the soil, is only about half as much as in Great Britain and Germany.

As the price of food advances, those in the city with small earning power most necessarily seek less expensive quarters and physical deterioration under such circumstances is inevitable and rapid.

Any educational plan which will help to convince a large class of people who are recent arrivals in the cities or who contemplate going to the city to live that they are better off in the country than

they can ever hope to be in the city will be very much for the interests of the general population.

The principal reason why the productiveness of American farms has fallen so low is the unwillingness of a large number of people to remain on the farm or have anything to do with the farm. It is said that the tendency to move to the city has been very much checked in a year or two. If so, there are certainly some advantages to balance the present high cost of food products.

Pathology Rather than Ethics

The change of sentiment as to the drink habit during the comparatively past few years has been one of the most interesting movements that has been under observation. About the time when the prohibition movement was started, excess indulgence in intoxicants was looked upon as due to natural depravity. As the subject has been studied pathologically, there has grown up a gradual change of sentiment.

It only seems to require a certain environment and certain physical conditions to produce excessive drinking. A great many men of apparently normal health feel the need of some kind of a stimulant at various times and if that stimulant is at hand they use it. After a time it becomes an absolute necessity. Recognition of this fact has been shown by a certain insurance company that at one time made their contracts subject to modification in the event of the insured becoming a heavy drinker. They have seen the injustice of this form of contract and have withdrawn it.

As long as life is strenuous and the battle for existence hard with the majority of people, there will be some who will be tempted to drink as a means

to bolster up their energies, and, as long as the open saloon provides these opportunities, those who seek temporary stimulant will resort thither.

The temperance question therefore is becoming greatly modified. The drinking man instead of being regarded as deliberately immoral is looked upon as unfortunate. It is human nature to wish to extend a helping hand to the unfortunate, hence the steadily increasing sentiment against the maintenance of these traps for the unwary, the open saloon.

The watchword of a large number of workers in certain sections is: "The saloon must go." These people are animated by a more or less fanatical zeal. Fanaticism has, however, accomplished many good things and it is likely that, with the sound judgment of the people at large at their backs, these enthusiasts will eventually prevail in all but the most thickly settled portions of the country.

Just what the result will be in the city, of this present tendency, it is hard at this time to determine, but if the study of the sociological conditions of the cities is continued along the lines now mapped out the conclusion must force itself upon those prominent in this movement that about the greatest obstacle they have is the saloon. Thus, if the commendable efforts of this element are continued, the opposition of the open saloon must eventually become overwhelming even in the largest cities.

Smuggling as a Fine Art

A great number of normal people, who manage to live a fairly comfortable life without the display of diamonds, understand that the levy of customs duties upon goods brought into this country from foreign countries is for the purpose of providing the necessary revenues for

the maintenance of the government. A few people who not only have the ordinary comforts of life but are able to spend large sums for travel abroad have seemed to consider that they should be a privileged class and that the valuable merchandise which they purchase abroad should not pay its quota of custom duties as in the case with goods brought in for the entire population. They have therefore devised many cunning schemes by which to secrete valuable jewels and laces and by means of a bold front and alleged social position they often succeed in evading the payment of these duties.

There is a great deal of socialistic talk at the present time and probably nothing helps more to develop the disposition to assume an antagonistic attitude toward people of wealth than to see these same people of wealth consider themselves exempt from the ordinary restraints of the law.

Mr. William Loeb, Jr., Collector of the Port of New York, has shown a very commendable disposition to smoke out those smugglers who feel that they are entitled to this special privilege and it is said that he purposes to make an example of certain women who try to avoid payment of these custom duties by sending them to jail for a time. It is not likely that any considerable number of people will disapprove of such an action. One valuable lesson needs to be learned and that is that the only special privileges which people are entitled to are those they are able and willing to pay for.

Political Animosities Increasing

The conditions of Kilkenny are likely to be pretty constantly in mind during the coming congressional campaign. There hardly seems to be any one in the political arena at present who is on good terms with any one else. There has

never been a greater exhibition of political sarcasm on all sides than during the present summer.

The Republicans are fighting tooth and nail in all directions and the left-handed compliment is considerably more common in the Democratic fold than any other kind.

Probably no political event in recent years has aroused so much rage, desperation and gnashing of teeth in certain quarters as the participation in the current political discussions of Mr. Roosevelt.

Instead of quietly withdrawing to his country seat, giving his attention to care of poultry and the raising of flowers, something which would please a great many people very much, he has persistently ignored all suggestions as to the propriety of such a course and insists upon having a great deal to say about a great many subjects.

The tariff, which has for a generation been the cherished cornerstone of the Republicans, has been criticised as sharply by Republicans as by Democrats; in fact the democratic campaign can be easily provided for with tariff arguments by republican critics of the last tariff measure, which was recently made a law by republican votes. At the same time very few practical Democrats believe that that same tariff should be much, if any, lower on most of the essential schedules, all of which goes to show the utter lack of necessity of much of the political invective which now heats up the surrounding atmosphere.

In reality the principal issues are personal ones and when the situation is analyzed and the causes of the present political animosities are traced up they will be found to have started generally from the office of the Secretary of the Interior.

Had there been no Ballinger issue the disputes which now prevail throughout the country would have been largely avoided and the Congressional Campaign of 1910 would have probably been a cut and dried affair with little or no acute interest manifested in any direction.

Whether or not Mr. Ballinger is as friendly to certain interests as has been charged, the fact remains that he constitutes about the heaviest burden that any chief executive has ever had to carry for any considerable length of time.

The Summer Migrations and what they Suggest

Years ago the family physician was given the credit for showing a great deal of wisdom and technical knowledge when he had advised that a patient be sent away for a change of scene. At the present time the patient and all the patient's husky relatives have that lesson already learned and are only too eager to hunt for the change of scene on the slightest provocation.

Trains passing from country districts to the cities were never so crowded at any previous time as this year. The summer exodus has reached an enormous figure. In practically every case this is due to the fact that all classes and conditions of people now realize the necessity for a change and calmly and deliberately plan to spend a reasonable amount of money for securing that intermission from the regular grind which every normal person requires.

However, while people of this country spend much more lavishly for recreation than do the inhabitants of other countries, for the good reason that they have more to spend, it is more questionable whether they spend as wisely as do the people of other countries.

It is a very unusual thing to see open-air services of meals, ices and soft drinks

in our cities, even where they would seem to be most likely to be appreciated.

The American patron of a city café or restaurant in midsummer expects to eat his meal in a stuffy atmosphere or one that is at best stirred up a little by an electric fan. When an American goes, accompanied by his wife, for an evening's entertainment he expects to patronize the theatre or opera house on an expensive plan rather than listen to good music at small expense as is the custom abroad. It is not always necessary to spend lavishly to be amused, and there should be people in every American city who are wise enough to recognize commercial opportunities for furnishing high-grade music under wholesome and hygienic conditions at moderate prices.

Rubber Boots or Rubber Tires

The rapid advance in the price of rubber goods of all kinds is accounted for through the enormous consumption of rubber in the automobile industry.

Until it was discovered some decades back that rubber could be melted and run over a mould and thus constitute a weather-proof foot covering, it was the habit of those who found it necessary to be abroad on wet days to splash about in wet feet, and take it as a matter of course.

In the good old days it was the custom in every well-regulated household to have a dish of tallow ready to be warmed up at any moment and applied liberally to the leather foot coverings then universally used.

A good thick application of tallow, well rubbed into a leather shoe or boot, would "turn water" for quite a while.

It looks as though tallow-dressed leather shoes would have to take the place of rubber foot coverings altogether in the near future.

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Original Articles

COLICA MUCOSA AND ITS TREATMENT: GENERAL CONSIDERATIONS.

By J. A. STORCK, M.Ph., M.D.,

Professor of Diseases of the Digestive System in the New Orleans Polyclinic;
Visiting Physician to the Charity Hospital,

NEW ORLEANS, LA.

IN so far as my observations are concerned, the syndrome called *colica mucosa* by Nothnagel occurs more frequently in women than in men, and, while it occasionally occurs at as early an age as fifteen years, it is seldom seen at fifty. I have seen a typical case, however, in a man of eighty-one.

The majority of patients are of the neurotic type, possessing the general characteristics of neurasthenia or hysteria. Many have been sufferers from digestive disturbance, principally of a nervous character, i.e., nervous dyspepsia with hyperacidity. Some give a history of a tendency to (nervous) diarrhoea extending over years, but by far the greater number complain of long-standing constipation. That the syndrome is often present in true cases of enteritis is beyond cavil, and that it is often present without any anatomic lesion of the intestinal mucosa is also proven. Diseases which impede the movement of the bowel are often mentioned in the histories of these cases.

While a certain small percentage of cases of *colica mucosa* give no evidence of constipation, the greater number have their attention first attracted to the condition by the passage of hard fæces and the discharge of mucus, with or without pain. The constipation existing may be of the atonic or the spastic variety, the latter being seen most often in the younger and the former in the older victims.

Regarding the rôle of constipation and neurasthenia as etiological factors in *colica mucosa*, I agree with von Noorden, when he writes: "Neither constipation alone, nor neurasthenia alone, nor the common combination of these states can produce *colica mucosa* unless at the same time there is some involvement of the nervous apparatus that governs the secretion of mucus in the large intestine. This characteristic involvement of the nervous apparatus can best be called, according to Nothnagel, a secretory neurosis."

Aside from the passage of hard *fæces* and mucus as initial symptoms, there is also, in a goodly number of cases, a feeling of abdominal distress, with rolling and noises in the intestine, often accompanied with pain (enterospasm). The pain most often occurs when the mucus is discharged in large quantities, and is tough in consistency. The explanation of the enterospasm is not positively known, but it may be caused by the efforts of the intestinal mucosa to rid itself of the partially dehydrated mucus which has become adherent to it. This mucus differs from the mucus discharged in other bowel conditions only in being tougher, due to the lessened amount of water it contains. At times the mucus occurs in jelly-like masses or assumes the form of pellets.

It is to be noticed that the principal signs of the disease are the evacuation of mucus and attacks of pain. These symptoms are at times of short duration, or, again, may last for some days. Often victims of colica mucosa are free from evacuations of mucus for long periods of time. This is particularly true if their mental poise is not in any manner disturbed, for it is often observed that, during periods of comparative ease and freedom from symptoms, an attack may be precipitated by worry, anxiety, business or social cares, or even by excessive joy. Again, slight indiscretions of diet are sometimes blamed for an attack. If the bowels become constipated, attacks resembling mild appendicitis may occur, or enterospasm with discharge of mucus may take place.

During the acute exacerbation, there may be observed a rise of temperature, seldom exceeding 100.5° F., which, as a rule, lasts only so long as the bowels remain confined.

Loss of weight, due to abstention from food, is, in some cases, considerable.

The *fæces* are always to be carefully examined for blood, amœbæ, ova, parasites and tubercle bacilli, by way of exclusion.

Our first object in beginning the *treatment* is to relieve the acute attack. When the pain is severe the patient should be put to bed and hot, moist, linseed poultices applied to abdomen as long as the acute exacerbation lasts. To assist in the alleviation of pain, opium, well-disguised, may be administered by the mouth, or given in suppositories; morphine sulphate may, instead, be given hypodermically. Opium may also be given when large or small amounts of mucus are frequently evacuated and prove annoying to the patient, but under no consideration is it to be continued over a long period.

After the administration of the opium, and when the patient is comparatively quiet, a high, warm (100° F.) enema of one or one and a half pints of water will assist in the expulsion of mucus. Two or three hours after the watery injection, six ounces of warm liquid albolene or pure olive-oil may be given by the bowel, after the method suggested by Fleiner. This further assists in freeing the intestine of mucus. Compounds of the bromides, particularly that of strontium, given in suitable doses and repeated sufficiently often, are beneficial in controlling the nervous condition, and thereby lessening the secretion of mucus.

After the acute attack has subsided, and if the patient be not too weak, gentle outdoor exercise is to be insisted upon. On the other hand, should the patient's condition not warrant exercise, rest in the open air is to be enjoined.

Regarding the diet in colica mucosa, it often becomes a problem as to what will best agree with the patient and at the same time conserve his strength. A coarse diet, such as that suggested by von Noorden, gives good results in a fair percentage of cases, and is that which I most often employ; but I often come across cases that do not do well on this diet, and in which I am compelled to give food of a blander character.

Some time ago, through Schmidt, a suggestion was given to the profession concerning the use of agar-agar in constipation. I have since employed preparations of this glue-like substance in the constipation of colica mucosa. The use of agar-agar has greatly simplified the diet problem in these cases, for, even when the patient is taking bland food, the addition of from two to four teaspoonfuls of agar-agar, daily, causes the stools to become soft and bulky. This substance, by its property of holding water and increasing in bulk, prevents desiccation of the feces, stimulates the mucosa and promotes peristalsis, thereby assisting in the free evacuation of the intestines. It has been suggested that the use of extract of boldo in small doses ($\frac{1}{8}$ grain), in conjunction with agar-agar, will increase its activity through its action as a cholagogue. While I have had a few good results from this combination, I am unable to speak with any assurance as to its general efficiency. Agar-agar is not unpleasant to take, and may be used after the manner advocated for an indefinite time without causing any deleterious effect whatever.

The care and treatment of this class of patients, as above outlined, will be found sufficient in the majority of cases. Now and then, in individual instances, symptoms may arise which must be dealt with according to indications.

The patient should be advised regarding his true condition, and warned against imprudence and indiscretions which might tend to produce fresh attacks. As to the *prognosis*, about 80 per cent. of cases are completely cured when treatment is begun sufficiently early and is intelligently carried out. The remainder comprises those who relapse occasionally and those in whom indifferent or no results are obtained.

SOME POINTS IN BACTERIAL THERAPY.*

By F. E. STEWART, Ph.G., M.D.,
GERMANTOWN, PA.

IN carrying out the Working Bulletin System in connection with the scientific department of a large manufacturing house during the last two years, I have accumulated in my files about ten thousand letters from physicians in all parts of the United States and our insular possessions, who have applied to us for information on the subject of bacterial vaccines and tuberculins. This paper is in the main composed of questions from such correspondents and reports

* Read at the Eleventh Annual Meeting of the American Therapeutic Society, held in Washington, D. C., May 5, 6 and 7, 1910.

of their experience in the use of these products. The questions are important ones, and the experiences reported are very suggestive in character. This paper is presented with the hope that it may excite discussion, and that the information thus derived may prove of service to the profession, particularly to those who are making a special study of bacterial therapy.

1. What nomenclature should be adopted for bacterial vaccines? The name "bacterial vaccine" was applied to this class of products by Wright because they are used for producing immunity against pathogenic bacteria similar to the immunity against small-pox produced by the use of bovine vaccines. But the name "bacterin" has been proposed as more appropriate than "vaccine," because the latter term refers more properly to Jennerian vaccination. In this paper I have used the term "bacterin" as synonymous with "bacterial vaccine," with the distinct understanding on my part that this name is free to science and commerce and is not controlled by any manufacturing house. In fact, the name was proposed to me by Dr. S. Solis Cohen,¹ of Philadelphia, who will corroborate this statement.

2. What is the diagnostic value of tuberculin reactions in tuberculosis? Several articles have appeared condemning the tuberculin diagnostic reactions as of little value, because reactions occur in persons not suffering with any active tuberculous infection. It is, however, pointed out that a large proportion of healthy individuals carry latent tubercle bacilli in their tissues, causing them to react to the tuberculin test. This fact, while, of course, well known to students of the subject, is not so well understood by the profession at large. Referring to the von Pirquet reaction, Hamburger,² in 1898, pointed out the fact that it is extremely difficult to find an adult entirely free from tuberculosis, and this explains the great frequency of the von Pirquet reaction in adults. And von Pirquet himself has often stated that its greatest value is in the diagnosis of tuberculosis in children. The same objection is made to the Moro reaction, although it was claimed by Emmerich,³ and others that with the Moro test fewer reactions occur in persons who are clinically tuberculosis-free than when the von Pirquet reaction is employed. Out of 60 cases clinically free from tuberculosis, 44 reacted to the von Pirquet test and only 19 to the Moro reaction. Drs. Charles L. Greene and Frank E. Burch,⁴ of St. Paul, have given an account of the practical utility of the cutaneous and ophthalmic tuberculin tests, based upon their experiences in 83 cases, all of whom were over eight years of age. The authors conclude that the reactions were comparable to that of the old injection test with tuberculin; that the two tests ran parallel; that both tests were accurate, but the subcutaneous test the more reliable; that all patients with tuberculosis react; that advanced cases with a low resisting power give a slight reaction; that a failure to react was of great clinical importance; that the reported bad results following the ophthalmic test

¹ Professor of Clinical Medicine, Jefferson Medical College, Philadelphia, Pa.

² *Münchener medizinische Wochenschrift*, 1908, No. 23.

³ *Münchener medizinische Wochenschrift*, 1908, No. 20.

⁴ *New York Medical Journal*, June 20, 1908.

indicated the necessity for caution in its application and that relatively few persons react who do not on careful examination show tuberculosis.

Several interesting cases have been reported to me personally of reactions following the ophthalmic test in apparently healthy individuals. One case was that of a physician who telephoned to me from a distant city, where he has a large private practice and a private sanatorium devoted to the treatment of tubercular disease. To assure a patient of the harmlessness of the conjunctival test he used it in his own eye, when to his horror a reaction occurred. In great alarm he telephoned to the writer for advice, which advice was to come to Philadelphia, for a careful physical examination. Dr. S. Solis Cohen examined the case with me. We found that the patient was overworked; that his general health was giving way under the strain; that he had a limited area of slight dullness in one of his lungs, and that several members of his family had died of tuberculosis. Under these circumstances we assured him that, although he had no symptoms justifying a diagnosis of acute tuberculosis, the probabilities were in favor of his rapid decline and death if he did not at once drop his practice for a time and take proper rest and treatment. He went away sorrowful, as he felt that he could not afford to take such advice, but, being convinced as to its wisdom, he did finally follow it. Six months later he reported to me at the Atlantic City meeting of the American Medical Association. He had completely regained his health, had added materially to his weight, and had returned to his work. This case illustrates another phase of the subject to which the various authorities have not called any special attention: that is, the value of the tuberculin reaction in diagnosing doubtful cases. The physician just mentioned said that if the reaction had not occurred he could not have been convinced of the necessity for making such a sacrifice in order to regain his health, and that he would doubtless have continued at work until forced to stop, when it might have been too late. These tuberculin reactions are therefore of great service to the physician in convincing doubtful patients and their friends of the necessity for proper treatment, and the fact that those who are apparently well sometimes react to the tuberculin does not in the least militate against the value of the test; it merely proves the presence of latent tubercular lesions.

Drs. Samuel McC. Hamill, Howard Childs Carpenter and Thomas A. Cope,⁵ of Philadelphia, reported the results obtained in 134 cases in children under eight years of age. They found uniformity of reaction with the von Pirquet, the Moro, and the ophthalmic reactions, but considered that all three were of less value in the diagnosis of the irregular forms of tuberculosis than had been hoped that they would be; they considered a negative reaction of more value than a positive one; that the type of the reaction bore no relation to the type of the disease, and that the ophthalmoreaction was sometimes followed by serious inflammation of the eye, and even by loss of vision. Nothing has been published in 1909 or 1910 to alter to any great degree the verdicts published in 1908. The ophthalmoreaction has been quite generally abandoned, on account of the danger attending its use, yet, in the hands of Baldwin,⁶ of

⁵ New York Medical Journal, June 20, 1908.

⁶ Adirondack Cottage Sanitarium, Trudeau P. O., Saranac Lake, N. Y.

Saranac, results seem to be uniformly good. Baldwin uses a $\frac{1}{2}$ of 1 per cent. solution of precipitated tuberculin, repeated if no reaction occurs, using a 1 per cent. solution in the other eye. He takes care to confine the test to healthy eyes, and calls attention to the danger of using it in inflamed or diseased eyes.

3. What is the value of typhobacterin, or typhoid vaccine, as an immunizing and curative agent? The value of the injection of killed typhoid bacilli in immunizing armies is now generally recognized by most civilized nations, but its use by individuals about to visit regions infected with typhoid fever is perhaps a novelty. In a recent conversation with a former representative of the United States Consular Service in China, who was about to visit India, I learned, much to my surprise, that well-informed laymen now consider it a wise precaution for persons to take immunizing doses of typho-bacterin before going to typhoid-infested regions. I learned also, more recently, from a New England correspondent that the lay public is beginning to demand bacterial treatment from physicians for other diseases besides typhoid fever.

Reports regarding the curative value of typho-bacterin are not sufficiently conclusive to warrant dogmatic statements. The following instance, however, illustrates the possibilities of this treatment. A most interesting letter recently received from a physician contained a clinical chart showing the remarkable results obtained by him in a case of typhoid fever. On the tenth day of the disease, after a temperature record of 104° F. for seven or eight days, with a pulse rate of 140, an injection of 40,000,000 killed typhoid bacilli was given. Within forty-eight hours the temperature had returned to normal and the pulse to 76, and there was no further rise of either. I am, of course, aware that one swallow does not make a summer, and that this case may only be a remarkable coincidence. But such brilliant results are unfortunately apt to cause over-enthusiasm and disaster before experience has been gained, as is shown by the following history: A physician in a certain county became very much elated on account of the remarkable results he had obtained in several cases with the bacterial treatment, and he told the good news to his professional brethren, who commenced to employ bacterial therapy without proper discrimination. Over-enthusiasm without proper precaution was followed by deserved disaster, but unfortunately the victim of his own inexperience blamed the disastrous results on bacterial therapy instead of on his errors, and contributed to the county medical society a paper which led to the passage of a resolution condemning the use of bacterial vaccines *in toto*, and it will doubtless be some time before the members of that medical society realize that the fault is not that of bacterial therapy. In the mean time, physicians and patients are the losers.

4. What is the value of Neisser bacterin, or gonococcic vaccine, as a remedy for gonorrhœal affections? It seems to be generally agreed that in the treatment of gonorrhœa the acute urethral cases do not require as large doses as do the chronic cases; also that arthritic cases require much larger doses than the urethral cases. Allen⁷ "warmly recommends" the routine practice of

⁷ R. W. Allen, M.D., B.S. Lond., late pathologist to the Royal Eye Hospital; late Gull student of pathology, Guy's Hospital.

giving to every acute urethral case one or two injections of from 75,000,000 to 150,000,000 gonococci as soon as the more acute symptoms begin to subside and the thick discharge to diminish. Allen states that convalescence was complete in two or three weeks, and that no secondary complications or backward extension occurred in any of the series of cases treated in this manner. Other authorities prefer much smaller doses in acute cases. One of my correspondents, Dr. W. R. Jamieson, President of the International Medical Association of Mexico, writes as follows: "I may say that I am having most excellent results with the Neisser bacterin, more especially since I have learned, mostly by bitter experience, to use it properly."

In a paper read before the fifth annual meeting of that association, at Aguascalientes, January 24 to 27, 1910, Dr. Jamieson recommended in acute cases doses of 5,000,000 to 15,000,000 at intervals of two to four days, according to the stage and severity of the disease, gradually increasing the dose as the symptoms abated, and taking pains to avoid, as far as possible, the production of a too pronounced negative phase. The chronic cases received an initial dose of 25,000,000 to 50,000,000, repeated in five to eight days. (See *Therapeutic Gazette*, May 15, 1910.)

5. What is the value of Neisser bacterin as a diagnostic agent? Irons⁸ states that the injection of 500,000,000 killed gonococci into the tissues of a person free from gonococcal infection was found to cause practically no constitutional disturbances in 8 cases. In infected cases, however, results were quite different. Within twenty-four hours, and corresponding to the negative phase, there was increased articular pain, tenderness, rise in temperature, and general malaise; the reaction being so pronounced that it was suggested that the injection of killed gonococci be employed as a diagnostic agent in cases of doubtful gonococcic infection. It has been my fortune to learn the practical bearing of this test in several cases. A Philadelphia physician was called to treat a patient who had been discharged from a hospital after several weeks' treatment of what was pronounced to be tuberculous infection of both knee-joints. The hospital treatment having been of no benefit, the doctor tested the case with tuberculin, with negative results. A dose of 50,000,000 killed gonococci was then injected, against which there was a violent reaction, followed later by marked improvement in the condition of the patient. Failure of reaction after injection of the dose used by Irons is not to be considered sufficient to justify the physician in pronouncing a case non-gonorrhœal, as the following incident shows. A classmate of the writer, a well-known Philadelphia surgeon, telephoned that he was at a loss how to proceed in a case of gonorrhœal arthritis, in which doses of 300,000,000 killed gonococci had been of no benefit, although he had used this amount successfully in other cases. I advised that the dose be gradually increased until he obtained a reaction, and then continue the treatment in doses just below the reaction point. This patient was at first given doses of 50,000,000 killed gonococci, with slight reaction. The dose was then increased to 500,000,000. No reaction occurred, but there was some

⁸ Archives of Internal Medicine, vol. i, No. 4, p. 433.

apparent diminution of the discharge. Next day a dose of 1,000,000,000 was given without result of any kind, and two days later the same amount was again injected, without reaction, but with further decrease in the discharge. The next day a dose of 1,500,000,000 was given, and three days later the dose was increased to 2,000,000,000. The next day a dose of 1,000,000,000 was given, and two days afterward 1,500,000,000. Owing to indiscretion on the part of the patient a relapse then occurred. Four days elapsed before the next injection of 1,500,000,000; then, two days later, a dose of 3,000,000,000 was injected. During all this time the patient was gradually improving, but no further reaction occurred, although the dose had been greatly increased. The patient was under observation from February 9th to April 25th. He was given in all 33 injections, increasing from 50,000,000 to 3,000,000,000 at a single dose, no reactions being observed in the larger doses.

In the opinion of this observer the initial doses of Neisser bacterin should be larger than usually employed and large doses should be used to keep up the effect, and that in this manner the time consumed in the treatment of the patient would be shortened.

Other physicians report better results in small doses than obtained by them in larger doses, which goes to show that each case must be individually considered, and the doses, as to amounts and interspacing, guided by the condition of the patient.

6. What is the value of acnebacterin, staphylobacterin, and staphyloacnebacterin as therapeutic agents? Acnebacterin is said to give better results in the treatment of comedones than the staphylobacterin, while the latter appears to be preferred in acne indurata. Staphyloacnebacterin seems to give good results in acne of either type. Large and progressively increasing doses are often required, with persistent treatment for months. Allen recommends an initial dose of 250,000,000 killed staphylococci, soon increasing to 500,000,000, 750,000,000, and 1,700,000,000. The interval between doses varies from three days to a week or more. He reports a case which required a dosage of 4,000,000,000, at ten-day intervals. He also states that in cases of deep-seated foci which refuse to come to a head (acne indurata) hyperæmia by means of dry cupping is a very useful adjuvant to treatment with bacterial vaccines. Many cases of acne do well under treatment with mixed stock vaccines—*albus*, *aureus*, and *citreus*. Other cases apparently require treatment with autogenous vaccines. I have received many requests for information as to the bacterial treatment of acne, which are invariably answered by advising that the Working Bulletins be carefully read, after thoroughly studying Wright's original papers and learning the principles of vaccine therapy as described by the master thereof. Attention is called to the necessity of using with the bacterin treatment the same treatment as would be employed without bacterial vaccines. Especial emphasis is laid on the fact that Wright recommends the production of hyperæmia in connection with the use of bacterial vaccines. Many cases of acne are cured by bacterial therapy, but others have proved very stubborn. Treatment with combined staphylococcic vaccine has proved quite successful in the treatment of chronic furunculosis. Some physi-

cians prefer to use the staphyloaureus vaccine, as it is said that the greater proportion of the cases of acne are due to aureus infection. The fact that staphylostreptococcic mixed infection occurs should not be forgotten.

After reading this paper before the American Therapeutic Society it was my privilege to confer with Dr. Martin F. Engman, of St. Louis. He reported his experience in the treatment of 500 cases of acne with acnebacterin in a paper read before the American Dermatological Society, Washington meeting, and emphasized in our interview what he had reported in his paper, viz.: in his experience better results are obtained in doses of 1,000,000 to 5,000,000 killed bacteria than in the larger doses recommended by other observers.

7. Is stock streptococcus vaccine, or streptobacterin, of any therapeutic value? It is, of course, recognized that the streptococcus is not a single individual, this being the generic name for a large and heterogenous class, the members of which are capable of producing the most varied forms of lesions. Yet, in spite of the frequent failures of bacterial therapy in streptococcic infections, excellent results are often obtained from treatment with stock vaccines. A Philadelphia physician, with whom I have several times been in consultation, recently asked me for suggestions as to the treatment of a case of erysipelas involving the face, head and ear. The patient complained of headache and the temperature was 103° F. Bearing in mind what Dr. Barton C. Hirst,⁹ of Philadelphia, had told me of his experience in the treatment of streptococcic infection, using both antistreptococcic serum and streptobacterin, and being of the opinion that the use of the bacterin increases the efficacy of the serum, I suggested the injection of streptobacterin, to be followed by the use of the antistreptococcic serum, if necessary. Soon after the injection of the bacterin the temperature began to fall, and within twenty-four hours it registered 100° F. Another injection of bacterin was given, and within a few hours the temperature returned to normal, the eruption meanwhile fading away. As to the combined treatment with serum and bacterin, during the past year there have been reported to me no less than six cases of streptococcic infection in which antistreptococcic serum proved curative. The doses of 80 cubic centimeters, three or four times during the twenty-four hours, employed by Dr. Hirst may seem excessive, but are necessary to secure the desired results. If this dosage can be reduced by combining streptobacterin with the serum it will be very advantageous from the standpoint of economy, if for no other reason. Still greater advantages are to be obtained by using the bacterin first, as it may be found to be sufficient. It is, of course, necessary that a polyvalent bacterin or a polyvalent serum be employed, and, for reasons stated, one brand may prove efficacious and another one fail, as occurred in a case in which Dr. Hirst was called as consultant.

Theoretically, autogenous vaccines should always be used in the treatment of streptococcic infections, but this is not always necessary, as is shown by the experience of the Russian physician, Gabritschewsky, who reports good results

⁹ Professor of Obstetrics, University of Pennsylvania, Philadelphia, Pa.

with stock streptococcic vaccine as a preventive and curative in scarlet fever. His observations were made on more than seven hundred children.¹⁰

8. Of what value is streptobacterin as an immunizing agent? It is believed by some physicians that streptobacterin may possess great value as an immunizing agent in prophylaxis against streptococcic infections. This claim is now being tested in the following manner: All the children in a certain school where 2 cases of scarlet fever had recently appeared have been treated by giving to each child a dose of bacterin of 10,000,000 killed streptococci, it being hoped in this way to produce immunity and prevent an epidemic. The result of this treatment is being watched with much interest.

9. Is neoformans vaccine, or neoformans bacterin, a cure for cancer? Several years ago Doyen, the French surgeon, isolated from new growths a micrococcus which he believed to be the specific cause of cancer. The work of other investigators seemed to disprove that this micrococcus is the cause of cancer itself, but many believe that the intercurrent infections are frequently caused by the micrococcus neoformans, which is found in a large proportion of malignant new growths, especially those which are ulcerated. Wright and others have used neoformans vaccines in the treatment of ulcerated cancerous conditions, sometimes with remarkably beneficial results. Doyen is now using in Paris a treatment the nature of which he does not divulge in full, but it is supposed that neoformans vaccine is one of the products he employs. A Baltimore physician who spent some months with Doyen reports that he is convinced that the latter is obtaining good results, but he calls attention to the fact that Doyen uses fulguration before employing bacterial therapy and that this is intended to prevent metastasis. Some reports received from physicians who are using neoformans vaccine in the treatment of inoperable cases state that it often removes the odor and makes the patient more comfortable.

10. What is the therapeutic value of pneumonococcic vaccine, or pneumobacterin? Much interest is being aroused by collective investigation of pneumobacterin in the treatment of lobar pneumonia. Dr. Timothy Leary¹¹ calls especial attention to the following points: early diagnosis, early administration of the bacterin, and the necessity of full doses, that is, 10,000,000 to 50,000,000, progressively increased in acute cases, every four to eight hours. We were recently informed, however, that Dr. Leary has lately changed his dosage from the foregoing to 100,000,000 once in the twenty-four hours. It has been stated as an objection to this treatment that bacterial vaccines are not indicated in acute conditions, but Harris,¹² Willcox and Morgan,¹³ Mac-

¹⁰ For his extensive researches and confirmatory reports, you are referred to Roussky Vratsh, 1905; Centrbl. f. Bakt., vol. xli, 1906, pp. 719, 844; Zlatogoroff, *ibid.*, vol. xlii, 1906, pp. 77, 156; Langoway, *ibid.*, pp. 362, 463; Nidrigailow, *ibid.*, pp. 13, 102. See also editorial entitled "The Treatment and Prevention of Scarlet Fever by Injections of Dead Streptococci," Journal of the American Medical Association, January 4, 1908, p. 43.

¹¹ Boston Medical and Surgical Journal, November 11, 1909.

¹² British Medical Journal, June 26, 1909.

¹³ Lancet, 1909, vol. ii, p. 471.

Donald,¹⁴ Martyn,¹⁵ Batten,¹⁶ and others, as well as Leary, are using the vaccine in acute conditions, with apparently beneficial results. Interest has been excited among the dentists by Goadby's¹⁷ articles on the "Vaccine Treatment of Pyorrhœa Alveolaris." He treated 47 cases, 36 of which were cured, and 9 relieved. Leary,¹⁸ in an article on the bacteriology of pyorrhœa alveolaris, states that he has studied about 100 cases of pyorrhœa, in which he found a great variety of organisms, his most constant finding being the pneumococcus. Medalia¹⁹ finds that 90 per cent. of his cases of pyorrhœa alveolaris are of pneumonococcic infection, with which the staphylococci and the streptococci are more frequently associated than any other organisms. He also reports good results from the bacterial treatment of such infections. Sufficient evidence has not yet been accumulated to warrant a verdict either in favor of or against this method of treating pyorrhœa, but it is hoped that a remedy has at last been found for this most obstinate affection.

11. What are the causes of failure in bacterial therapy? The following are some of the possible causes of failure in bacterial therapy:—

(a) *Unrecognized Identity of the Infecting Bacteria*.—One of the most important factors in bacterial therapy is to know the identity of the infecting germ. This can be demonstrated by examination of the tissues or fluids of the infected zone, but many physicians in the country and the smaller towns are not sufficiently posted in bacteriology to do this work or to recognize the identity of the infecting germ, and, rather than put patients who cannot afford it to the expense of going to some medical center for a diagnosis, they do the best they can under the circumstances, and inject a stock bacterial vaccine of the kind they have reason to believe is the proper one to use. That a certain proportion of such cases fails is not surprising.

(b) *Unrecognized Mixed Infection*.—One correspondent used Neisser-bacterin in a case of cystitis of supposedly gonococcic origin, but without improvement in the patient's condition. A bacteriological examination revealed the presence of colon bacilli, and coli-bacterin was then used. This was followed by much improvement, but, as a cure did not result, another examination was made. This demonstrated the presence of gonococci in abundance; so treatment with the Neisser-bacterin was resumed, and complete recovery followed. Acne bacilli and staphylococci are frequently associated in acne; in bronchopneumonia pneumococci and staphylococci are generally present; staphylococci, streptococci, and other germs exist at the same time in tuberculosis, and mixed infection is said to be the cause of death in most cases. Friedlander's bacillus, micrococcus catarrhalis, staphylococci, etc., are found together in catarrhal affections. Mixed infection often requires a mixed bacterin treatment, and cases unsuccessfully treated with stock vaccines should not be pronounced failures until autogenous vaccines have been used.

¹⁴ Pathological Society, London, January 17, 1905.

¹⁵ Southern California Practitioner, 1908, p. 162.

¹⁶ Lancet, 1909, vol. i, p. 1454.

¹⁷ Lancet, 1909, vol. i, p. 1875.

¹⁸ Dental Cosmos, 1910, vol. lii, p. 52.

¹⁹ Boston Medical and Surgical Journal, 1910, vol. clxii, p. 42. Digitized by Google

(c) *Failure to Bring the Blood, with its Opsonin, in Contact with the Invading Micro-organisms.*—Wright²⁰ calls attention to the fact that failure may result if the blood, with its opsonin, resulting from the injection of bacterial vaccines, is not brought to the area of infection. For this purpose he recommends rubefacients, massage, Bier's method of hyperæmia, exercise, etc. The importance of following this advice of Wright is shown in the case of gonorrhœal arthritis of both knees previously mentioned in connection with the use of Neisser-bacterin as a diagnostic agent. This case was of several months' duration, and at once on the employment of the Neisser-reaction therapeutically there was very marked improvement. The improvement had ceased, however, and I was asked to see the case in consultation. As I found that the attending physician was provided with apparatus for producing hyperæmia by the local application of heat, I advised its use. The physician employed the electric light bath, and obtained excellent results from its use, together with continued treatment with the bacterin.

(d) *Failure to Recognize that Bacterial Vaccines are Vegetable Drugs Differing Widely in Properties and Potency and Each Requiring Separate Consideration as to Method of Application and Dosage.*—The difference between bacterial drugs in regard to properties and potency is well illustrated by tuberculin and Neisser-bacterin. The initial dose of tuberculin R. is .0001 milligram, gradually increased for effect, and unless great care is used dangerous reactions occur. The initial dose of Neisser bacterin varies from 20,000,000 to 3,000,000,000 and the reactions produced are comparatively mild. Both of these products vary widely in potency; which suggests the next reason why bacterial therapy sometimes fails.

(e) *Want of Standardization.*—Bacterial vaccines, like other vegetable drugs, require standardization to assure uniformity in character, quality and strength. This necessity is well illustrated by Neisser-bacterin. Injections of 50,000,000 produce marked reactions in some cases, while in other cases doses of 3,000,000,000 or more may be administered before reactions occur. This wide range of dosage is to be accounted for either by the difference in the sensitiveness of the body-cells of the individual to stimulation, or by difference in the potency of the bacterin. Now, when it is considered that the tinctures of strophanthus on the market vary 6000 per cent. in potency, and that no two lots sent out are the same in strength unless standardized, the question is at once suggested, does not the same necessity for securing uniformity of products exist in relation to bacterial vaccines? Standardization by counting the number of killed germs per cubic centimeter is not sufficient, because the virulency of each bacterial culture is different. Standardization by weighing the amount of bacterial substance present is no better than standardizing a tincture or fluidextract by weighing the amount of extractive it contains. Standardization in either case requires the determination by chemical assay or physiological test of the amount of activity the product possesses. There are no reliable methods for standardizing bacterial vaccines and tuberculins.

²⁰ Barton Lisle Wright, M.D., Surgeon, U. S. Navy.

12. What are combined bacterial vaccines, or combined bacterins? Combined vaccines, or combined bacterins, are mixtures of two or three kinds of pathogenic bacteria usually found associated in mixed infections. Staphylobacterin, as usually furnished, is a combination of the three species of staphylococci, viz., *albus*, *aureus* and *citreus*. Staphyloacnebacterin is a mixture made by adding the *acne* bacilli to staphylobacterin. In regard to the use of combined vaccines Allen says: "In certain conditions, such as pulmonary phthisis, tuberculosis of the bladder and kidneys and bones and joints, additional gravity is added to the case when to the primary infection secondary ones are added. All are familiar with the ease with which a case of early pulmonary phthisis or tubercular joint disease yields to appropriate treatment, and the difficulty of dealing with such a case when once staphylococci or streptococci have complicated the infection. Occasionally, it is true, great improvement follows the administration of tuberculin alone, but the best results will, I am convinced, be secured by either previously or simultaneously attacking the secondary infection. In these instances it is, as a rule, easy to ascertain the exact nature of this infection. In bladders and kidneys it is usually the *bacillus coli communis*; in bones and joints, staphylococci or streptococci. Other forms of bacillary infection there are, however, such as *pyorrhoea alveolaris*, gleet, and chronic tracheal catarrh, in which it is well-nigh impossible to tell which out of the many different bacteria present are responsible for the condition. The only thing then to do is to employ a 'combined vaccine.' " A correspondent recently called attention to the work of Dr. P. J. Pothuisje, of Denver, who is using pneumobacterin in conjunction with tuberculin in the treatment of pulmonary tuberculosis. With patients whose temperature is so high that tuberculin is contraindicated, he uses pneumobacterin only, and in most cases this causes the temperature to decline, the cough to lessen, the weight to increase, and the general condition to improve; so that, after a short period of this treatment, he is able to begin treatment with the tuberculin.

13. What is a polyvalent vaccine or bacterin? Bacterial vaccines are said to be polyvalent (of many worths) when made from cultures containing a number of varieties of the same kind of bacteria. Streptobacterin is a polyvalent vaccine made from a culture of streptococci which contains a large variety of streptococci.

14. Are bacterial vaccines harmless? The statement is sometimes made that bacterial vaccines are perfectly harmless. As a general statement, it is safe to say that drugs which are "perfectly harmless" are perfectly useless. Bacterial vaccines, or bacterins, consist of killed pathogenic bacteria and their toxins. They are therefore toxins, not antitoxins or curative sera, with which they are frequently confounded by physicians unfamiliar with bacterial therapy. When the disease germs in any given infection are not causing sufficient stimulation of the body-cells to generate enough specific opsonins and other antibodies to effect a cure, the use of bacterial vaccines will often prove of great therapeutic value. If, however, an overdose is given, the injection is followed by a marked exacerbation of symptoms, due to a pronounced negative phase, which may continue if the doses given are excessive or too frequently repeated.

According to Wright, if a proper dose of vaccine has been injected, no clinical symptoms should be produced, even during the negative phase; but other authorities advocate the injection of doses large enough to produce a slight clinical reaction, manifested by a feeling of malaise, slight rise in temperature, etc., and no doubt there are times when it is proper to increase the dose until a slight reaction does occur, at least for the purpose of testing the activity of the vaccine. The time to repeat the injection is during the positive phase, which is clinically characterized by improvement in the condition of the patient. Generally speaking, the intervals between doses should be from three to five days, to be increased to intervals of a week or two, as indicated, as the treatment progresses. Sometimes in acute conditions the injection may be repeated to advantage every twenty-four hours, and as the patient improves the intervals may be lengthened and the dose possibly increased. Used with proper precautions and in properly selected cases, it may be stated that bacterial vaccines are harmless, because when thus employed they not only do no harm, but are distinctly curative in their action. When they are used without discretion, however, they are capable of doing harm, although fortunately the harm is slight and no serious results are to be apprehended. This statement, it should be said, does not apply with equal force to all bacterial vaccines. Among the bacterial vaccines or bacterins to which it does not apply are the newer tuberculins, namely: "Tuberculin R." and "Bacillen Emulsion," the indiscriminate use of which is sure to be followed by disaster. The same statement applies to "Old Tuberculin," but this product being a glycerin extract of tubercle bacilli, and not containing the germ bodies, is not classed as a bacterin. Moreover, in the present state of knowledge concerning bacterial vaccines, the physician who limits himself to fixed rules of dosage is bound to lose out.

15. What are the keeping properties of bacterial vaccines and tuberculins? In preparing bacterial vaccines Wright uses a temperature of 60° C. for one hour, to kill the bacteria. It has recently been suggested that bacterial vaccines be prepared by omitting the use of heat, the $\frac{1}{2}$ of 1 per cent. phenol used as a preservative being amply sufficient to kill the bacteria. It is claimed that bacterial vaccines thus prepared are more active and keep longer, but I am informed that Wright sometimes uses vaccines two years old which have been prepared by the use of heat. As regards tuberculin, it is generally supposed that tuberculin "Old" keeps indefinitely, yet some observers claim that ointment made from it gradually loses its activity. However, I am informed by veterinarians that tuberculin "Old" reacts with cattle even when it is five years old, provided it is clear and odorless. The keeping power of the newer tuberculins is also in question. Serial dilutions of tuberculin, especially the higher dilutions, are said to deteriorate gradually and to be unreliable after two or three months. Some specialists renew their dilutions once a month, while others, equally experienced, use dilutions six months old. Conclusive evidence on this point is greatly needed.

Finally, I desire to call your attention again to the value of the Working Bulletin System as a method whereby manufacturers of new materia-medica products may place in the hands of the medical profession valuable information

concerning these products. As stated in a former paper, some years ago I suggested the formation by the large manufacturing houses of scientific departments and the adoption by these departments of the Working Bulletin System. This suggestion was accepted by a number of the manufacturing houses, and the plan, more or less modified, was carried out by several of them. The manufacturers of materia-medica products, with their scientific departments, are certainly in position to speak with authority in regard to the products themselves, but, as they are not engaged in the practice of therapeutics, they are not in position to teach the profession how to apply these products in the treatment of the sick. The Working Bulletin System, therefore, if properly employed by manufacturing houses, will consist of the publication of information relative to the manufacture and standardization of the products, and also of abstracts from the reports of competent clinical observers, impartially selected from the medical press throughout the world; due credit being given to the authors and publishers, so that the original articles may readily be referred to. What is most urgently needed is a strong central board of control, bureau of materia medica, or pharmacologic society, to act as a clearing house, including in its membership representatives of the medical and pharmaceutical professions and the large manufacturing houses, under whose supervision the Working Bulletins would be published. This would give scientific standing to the Bulletins and would render the Working Bulletin System of great service to both professions. This I have continuously advocated for thirty years, and I am more and more convinced of the value and importance of the plan. I take pleasure in presenting to the library of the American Therapeutic Society a bound copy of Working Bulletins on Bacterial Vaccines and Tuberculins, as an example of this class of literature.

IMMEDIATE AND AFTER MANAGEMENT OF THE PUERPERANT.*

By JESSE SHOUP, M.D.,

WASHINGTON, D. C.

THE puerperant is presumed to have been prepared according to the rules of modern antiseptic procedure at the beginning of labor, in that the hair over the vulva has been either cut short or shaved; that she has had a general scrubbing bath; that the genitals particularly have been cleansed with soap and water, especial care being given to cleansing the inside of the thighs and the folds or creases of the skin, and that, following the bath, the parts, from the waist down, have been bathed with a 1:1000 solution of mercuric bichloride. Also that, during the progress of labor, the vulva was kept covered with a towel wrung out of a solution of 1:1000 bichloride, and all unnecessary internal examinations avoided. The obstetrician should train himself to secure all

* Read at the Eleventh Annual Meeting of the American Therapeutic Society, held in Washington, D. C., May 5, 6 and 7, 1910.

possible information as to the progress of labor from external examinations, palpation, auscultation and intelligent observation. When an internal examination is made, the hand should be covered with a sterile glove and the vulva separated prior to the introduction of the examining finger. A glove is not sterile if it has touched some part of the patient's clothing or the bedding prior to the examination. It is not uncommon to see the doctor put on sterile gloves and then arrange the patient. During the third stage of labor the necessity for internal examination is extremely rare, and the nurse should never be allowed to make internal examinations at any time without the direct request of the physician. The evidence derived from numerous and careful investigations favors the conclusion that the normal vagina is free from micro-organisms, and that the vaginal secretions are fatal to them, with the exception of the gonococcus. So it may be assumed to be true that all infection of the genital tract is caused by either the nurse or the doctor. It is impossible to thoroughly sterilize the vulva, no matter how carefully we try. This being the case, it is readily seen how the examining finger may carry infection from the vulva to the cervix and upper vagina, where it can easily enter the uterus or be absorbed through broken surfaces of the mucous membrane. If the accoucheur would but keep in mind the fact that there is essentially an open canal extending from the vulva through the vagina, up the uterus and through the tubes to the peritoneal cavity, he would rarely neglect the essentials of asepsis.

In cases where suitable light and assistance is at hand, all lacerations of the perineum and lower vagina should be repaired immediately after labor. If, for good reasons, this cannot be done at the time of delivery, it should be done within the twenty-four hours following. Where instruments have been used to deliver the child, lacerations of the upper vagina and, in suitable cases, lacerations of the cervix should also be repaired at once. It prolongs the use of the anæsthetic but a few moments to do the necessary suturing and, by sewing up the tear, thereby closing the bleeding vessels, we save the patient from the loss of blood and restore the uterus to a condition by which convalescence is hastened. Most of the cases of so-called post-partum hæmorrhage are due to a lacerated cervix, and I believe the same rules should apply here as in other regions of the body. If the cervix is not repaired at the time of delivery, in the vast majority of instances this can be done before the patient leaves her bed. The edges of the tear can be freshened with the curette, and primary union is obtained in practically all cases. At this early period there is little or no thickening of the edges of the wound, and close apposition is easily made. Most of the tears can be sutured without the aid of a general anæsthetic.

After inspection of the outlet is made and all necessary repairs completed, the parts are cleansed with a 1:2000 solution of mercuric chloride, poured on from above and allowed to run down over the vulva. The washing is completed with cotton sponges wrung out of the same solution. In washing, the sponges are used with a downward stroke only, and each sponge thrown away at the completion of the stroke. The region of the anus is to be avoided until the last. The first dressing of the vulva should be of gauze or cotton wrung out of a 1:4000 solution of mercuric chloride. All soiled clothing should be removed

with the draw-sheet, a clean gown supplied, and the patient put to bed on her back, with her head low. She should not be allowed to turn on her side for the first two days. As rest is essential after so trying an ordeal, everything conducive to quietness should be carried out: the baby removed from the mother's presence, the room darkened, and all visitors excluded. No others than the husband and the mother should be allowed to visit the patient while she is in bed. There should be no douches, vaginal or uterine, as there will be no cause for either if the delivery has been accomplished under aseptic precautions. Gentle massage of the uterus through the abdominal walls will facilitate its contraction and cause the expulsion of retained membranes, blood-clots or other débris and assist in that process so much to be desired, an early and normal involution of the uterus and adnexa. After the first dressing the vulvar dressings should be sterile cotton or gauze next to the vulva, with a salicylated strip of gauze covering this and attached in front and behind to the abdominal binder. They should be changed as often as they become soiled. Before a fresh dressing is applied the vulva must be cleansed by pouring a solution of mercuric chloride, 1:2000, over the vulva without separation of the labia. All cleansings should be made from above downward, and all washings in the same direction. The nurse should keep a complete chart, noting all the conditions and peculiarities of the patient, in order that the physician may know at the earliest moment should any retrogressive change take place. At each visit of the physician the height to which the uterus reaches above the symphysis is noted. Its sensitiveness and contractility are determined by abdominal palpation, care being taken to ascertain at the same time the condition of the adnexa, especially with a view to the early detection of any inflammation occurring. If there is considerable tenderness in the region of the womb, and the organ is found to be relaxed and flabby, the physician's hand is applied to the abdomen, and massage with gentle strokes instituted and continued until the organ is found to contract and the soreness disappears. This takes but a few minutes and enables the doctor to ascertain the size and condition of the uterus and to apply the appropriate treatment at one and the same time. I find this massage the best treatment for suppressed flow and the safest way to cause the expulsion of retained membranes and detritus from the uterus. It is a routine procedure with me, and, as previously mentioned, it hastens involution. In the way of drugs to promote this, ergotin or a special preparation made from Spanish ergot, with the addition of strychnine and acetylsalicylic acid, is valuable. When the after-pains are too severe to be endured, acetylsalicylic acid or codeine, either alone or in combination, will be found to relieve the suffering. If the pains are due to retained blood-clots, gentle massage of the uterus will cause them to be expelled and ergot and strychnine, by their tonic effect on the uterine muscle, will prevent their re-forming.

The amount and condition of the lochia should be carefully noted at each visit, and, when any appreciable diminution is manifested, gentle massage should be applied over the uterus. Any marked rise of temperature after the second day ought to cause a suspicion of infection, and investigation should be insti-

tuted at once. When the temperature reaches 102°, the uterine lochia should be submitted to a bacterial examination. After the specimen is secured, the uterus should be examined with the sterile index finger and the tubes and appendages explored. If the uterine cavity is smooth, sterile water or saline douches should be given at once; but, if the uterus contains débris, this should be removed with the finger before such washing out. The curette should not be used, and mercuric chloride, phenol, or other antiseptics are contraindicated. When the infection has extended beyond the uterus, local treatment should be discontinued. In gonorrhœal endometritis active treatment is not required at the time, as the majority of these cases recover spontaneously, or the patient is left with a chronic endometritis and disease of the appendages, which can be treated much more advantageously at a later period. Measures which will keep up the strength of the patient, such as general tonics, are the most valuable, and alcohol and strychnine in large doses are the most reliable drugs for the purpose. High fever is to be combated with cold sponges or baths, rather than with antipyretic drugs. Saline solution per rectum, by the drop method, should be instituted early. Where the infection has extended beyond the uterus and parametritis or peritonitis exists, the icebag or coil should be applied over the uterus and appendages in the early stages. Later, moist or dry heat should be applied to the lower abdomen. Parametritic abscesses should be opened through the vagina as soon as the diagnosis is made with certainty. Pus-tubes and ovarian abscesses, if movable, should be removed by laparotomy. If they are adherent and readily accessible, vaginal puncture should be performed, and the abscess cavity packed with gauze. Antistreptococcic serum has been demonstrated to be of value in puerperal infection only as an agent to stimulate phagocytosis. It seems to have some value when given early as a prophylactic, but is not to be relied upon. Most operators agree that in this condition hysterectomy is usually contraindicated. Ligation of the thrombosed vessels, distal to the thrombus, seems to be more expedient.

The condition of the bladder of the puerperant should be noted carefully, as retention of urine following labor is frequent. The patient should not be catheterized until all other efforts have failed to cause her to urinate. She should first have hot applications applied to the region of the bladder, and hot sterile water poured over the vulva and applied to it by means of wet cotton or gauze, and an enema should also be given. Pressure should be made over the bladder, and the patient should be raised to a sitting position on the bedpan. The sound of running water sometimes has the desired effect. The catheter should be passed as a last resort, but the bladder should be emptied every twelve hours. Incontinence of urine after labor is usually due to an overdistended bladder. Pressure-paralysis of the *sphincter vesicæ* occurs in rare instances, and it is slow to yield to treatment. Tonics, electricity and massage give the best results. Cystitis is quite common during the puerperium, due to careless introduction of the catheter. In mild cases the patient should drink large quantities of fluids, such as milk and the carbonated and lithiated waters. For irritability of the bladder the balsams, such as copaiba or sandalwood, should be given, in 3- to 5-drop doses, in capsules, four times a day, or, instead of these,

5-grain capsules of phenylsalicylate or hexamethylenamine, repeated every four hours. When the process fails to yield to this treatment, daily irrigations of the bladder with a 2 per cent. solution of boric acid, or a 1:30,000 solution of mercuric chloride, should be practised in connection with the administration of tonics and stimulants. The infection may extend up the ureter to the kidney and cause a pyelonephritis, and this should be treated in essentially the same way as cystitis, unless a perinephritic abscess occurs, when the pelvis of the kidney should be incised. Hæmaturia in the parturient is caused by the dilatation of the veins induced by pelvic congestion in the last months of pregnancy, in consequence of the pressure of the child's head, by the use of instruments, or by a vesicovaginal fistula. It usually disappears in a few days.

The parturient should be given a laxative at the end of twenty-four hours after labor. Castor-oil is the best, but, if it should be too objectionable to the patient, magnesium citrate or phenolphthalein may be substituted for it. The last mentioned has the advantages of being tasteless and not affecting the child. The diet should, in some measure, be suited to the condition of the individual case, its character depending somewhat on whether or not the patient has lost a large amount of blood. Ordinarily, a diet consisting of milk, broths, weak tea, cocoa and simple soups, with the addition of milk toast, crackers, buttered toast, dry toast, soft-boiled or poached eggs, and any breakfast food, if thoroughly cooked, is suitable for the first two days. After the bowels have been moved well, a full dietary may be allowed, with the exception of pork, veal, corned beef, cabbage, turnips, cucumbers, canned corn, canned beans, vinegar, strawberries and melons, and any article that is known to disagree with the patient. The idea that the parturient should be starved is obsolete; she should have plenty of good food.

The patient should by no means lie on her back the whole time. After the first two days she should be allowed to turn from side to side and encouraged to lie on her face for short intervals. On the fourth or fifth day she may be permitted to get up to the commode, with the assistance of the nurse, and to sit up in bed for short periods. She should have a limited amount of exercise while she is in bed, such as that afforded by passive and resistant movements, supplemented by body massage. The breasts should be supported early by means of a broad, firm bandage passing over them and around the chest. If they become engorged, tender and painful, sterile absorbent cotton should be plentifully applied about them, and pressure exerted by tightening the bandage. If this treatment is instituted promptly, the circulation will be controlled and with it the flow of milk. If, with the above treatment of the breasts, the nipples are now cleansed, before and after nursing, with a saturated solution of boric acid, there will be little danger of mastitis developing. The baby should not be allowed to go to sleep at the breast. If this is the case, the nipples are apt to become macerated, with resulting erosions and fissures, which are not only painful, but constitute open avenues for the entrance of micro-organisms. The baby should never be allowed to nurse on a sore or fissured nipple; for this painful condition a nipple-shield should always be used. Weak and very anæmic mothers, and particularly those suffering from any form of

tuberculosis, should not be allowed to nurse their infants. This should likewise be forbidden in epilepsy, syphilis, chorea, nephritis and malignant disease, and whenever a woman is rapidly losing weight from any cause whatever. Lactation should be discontinued in a state of approaching pregnancy and, as a rule, it should not be kept up beyond twelve months.

There is a tendency to put all women through the same routine as to the time of leaving their beds, getting them up on the ninth or tenth day. Doctors are fearful of censure from the patient and her friends if she is not allowed to get out of bed by that time, and I believe a great amount of necessary treatment is neglected for fear of this censure. Before being permitted to sit up the mother should be carefully examined, in order to ascertain the size and position of the uterus and the condition of the birth-canal. If there is a displacement of the uterus, the organ should be replaced bimanually, and a proper pessary fitted to keep it in place. In some cases it is better to treat the condition with glycerite of boroglycerin tampons for a time before the introduction of the latter. About the only excuse the pessary has for its existence is in the early treatment of the displaced uterus of the parturient. If used in this condition, before fixed changes of the supporting structures have taken place, a pessary will prove most satisfactory. Where there seems to be an atonic condition of the uterus, antiseptic, astringent douches, varying from cold to hot, according to whether the condition is acute or chronic, may be used to accelerate the process of involution. Glycerin tampons are helpful in this class of cases by depleting the parts. All unhealed surfaces, the so-called puerperal ulcers, should be touched with phenol, iodine or silver nitrate, as the case demands. Great care should be taken, even at this late stage, to guard against infection, and nothing but the technique of aseptic surgery should be practised at all examinations and treatments. Sterile rubber gloves should be worn when examinations are made, and the parts prepared antiseptically. Infection need not be of the degree to cause puerperal fever in order to subject the patient to danger. We have seen how readily an infecting germ may reach the ovary. If the infection is but mild it may yet be sufficient to cause a hyperæmia of the organ, which may be followed by a subinvolution resulting in a fibrotic or cystic condition, with the causation of lessened function. This is naturally followed by a diminished ovarian secretion, inducing an unbalanced condition of the internal secretions which may result in hyperthyroidism, with such symptoms as palpitation of the heart, sleeplessness, rapid pulse, flushes, etc.

The mother should lie face down for two hours every day for the first two months. She should lift her child as little as possible, and not carry it in her arms during this time. Relaxed abdominal muscles allow a low abdominal tension, with the effect of enlarged and distended veins and organs engorged with stagnated blood, overcharged with carbonic acid and other waste products. The supplying of this vitiated blood to the general circulation causes languor, backache, restlessness, irritableness and a disposition to give way to trifles and to weep at every turn, evincing a lack of mental poise. In all cases of relaxed abdominal walls, with or without ptosis of the viscera, where massage and exercise have failed to effect restoration, some support, such as a Storm binder

or Rose bandage or, what, in the author's opinion, is better, a long, straight-front corset of the kind suggested by Dr. Gallant, should be worn. There should be no compression of the waist to interfere with the action of the abdominal muscles. The pressure should be between the ilia and the pubes, and when it is thus applied there will be a lifting effect which serves to hold the viscera in position.

All who would practise obstetrics should be able to thoroughly appreciate the value of time as the great factor in success. Let nature have her way. Not until the uterus is restored to its normal position, and all lacerations and weakened parts incident to parturition have been repaired, can the parturient be considered free from medical care. In this age of automobiles and airships there is a tendency to haste, to rush along, to "hurry up" things, and the doctor, imbibed with the spirit of the age, is likely to hurry the progress of labor by applying instruments before nature has had sufficient time to complete her work. In obstetrics the passenger and the highway of travel have always been the same, and there is little likelihood of either's ever being changed. Experience teaches us that, as we become more civilized, cultured and refined as a people, the slower and more difficult does child-bearing become. The two factors of most vital importance in the lying-in room are cleanliness and patience. In conclusion, I would suggest that the most important elements in the treatment of the puerperant are strict asepsis, the restriction of internal examinations to the minimum; careful massage of the uterus, daily for the first two weeks; to assist involution, the making of all necessary repairs of the weakened and lacerated parts early, and the prompt restoration of the uterus, if displaced, to its normal position, keeping it in place by means of some support until it will retain its position. If these measures are carried out we shall hear less often from the patient the complaint: "Doctor, I have not felt well since my baby was born."

DISCUSSION.

Dr. Barnes said it was hardly possible to emphasize too strongly the necessity for getting the post-partum patient off of her back. Constant lying in this position tends to cause backward displacement of the organs. The patient should be encouraged to lie upon her face or side, or even to occasionally assume the knee-chest position. This seemed to him to be the most important point in the paper, namely, the need of doing away with the liability to the sagging back of a heavy uterus, with more or less permanent ill effects.

Dr. Shoup said that one of his objects in writing the paper had been to sound a warning against the routine practice of getting these patients out of bed and discharging them at the end of ten days, without taking into consideration the special condition of the patient in each individual case. As a result of this treatment, not a few of the patients come back with pathological conditions which might have been avoided by the exercise of greater caution on the part of the physician.

Authors' Abstracts

THE ROUTINE USE OF THE AUTOGENOUS VACCINES (BACTERINS) IN THE GERMAN HOSPITAL, PHILADELPHIA.*

By J. C. DA COSTA, JR., M.D.,

PHILADELPHIA.

THE report embraced 50 cases, 17 of which were classed as septicæmia and 33 as local suppurative lesions, and suggested the following conclusions as to the utility of vaccine therapy in bacterial infections: 1. Autovaccines are of distinct service in the treatment of general septicæmia, especially in post-operative cases in which surgical measures have been ineffectual. Vaccines are useless in combating a sepsis so intense as to stifle resistance, and in such instances the clinical severity of the infection, rather than the identity of the offending bacteria, is the criterion of prognosis. 2. From the laboratory viewpoint, the prognosis is better in toxæmias than in proven bacteræmias, and the outlook is hopeless when streptococci invade the circulating blood. 3. Autovaccines produce the best results in local infectious lesions. 4. In the class of infections under consideration autogenous emulsions should be used invariably, except when some acute emergency calls for the immediate use of a stock preparation, in the meager hope of tiding over a crisis. 5. The opsonic index cannot be relied upon as an indicator for inoculation and re-inoculation, which should be governed by the general condition and local signs. 6. The best results follow a moderate initial dose of vaccine, with subsequent doses of greater potency and intervals of from three to seven days between the inoculations. 7. The larger one's experience with inoculation work, the more keenly must one realize how imperfectly the true scope and limitations of vaccine therapy are understood.

BACTERINS: THEIR PRESENT STATUS IN THERAPEUTICS.†

By NOBLE P. BARNES, M.D.,

WASHINGTON, D. C.

THE use of the bacterial vaccines now proving of therapeutic value, he said, was based upon the opsonic theory, advanced by Sir. A. E. Wright. From the mass of reports some brilliant results were found—some of doubtful value, and some of positive harm. The whole subject had been sifting through an experimental stage, of which little was known or understood; however, with

* Abstract of paper read at the Eleventh Annual Meeting of the American Therapeutic Society, held in Washington, D. C., May 5, 6 and 7, 1910.

† *Ibid.*

increased knowledge, more exact and scientific courses could be pursued. But we were yet far from realizing the dream of the immortal Pasteur, when he said, "It is possible for man to eradicate every contagious disease from the face of the earth." One of the common causes for failure with bacterial vaccines was misapplication, namely, the attempt at active immunization when the defenses have been exhausted and a bacteraemia exists. There were cases for antitoxins, and not for toxins. The whole subject was confused and confusing, on account of the variability in the application. Some guide their doses by the opsonic index, others on clinical signs; some are satisfied with stock preparations and others insist on autogenous bacterial vaccines. Doses, intervals, and the keenness of observation and excellence of judgment are likewise at variance.

Among the conclusions reached by B. A. Thomas in his report of 119 infections treated by vaccines were the following: "The diseases contraindicated for bacterin therapy are the diffuse infections, characterized by septicæmia, pyæmia and grave sapræmia.

"Those in which therapy by this agent is beneficial or curative are the superficial acute, subacute and chronic processes; especially the last two.

"The acute cases, in which brilliant results can be uniformly expected, are those of acne vulgaris, furunculosis, carbunculosis and subcutaneous abscesses.

"Subacute and chronic gonorrhœal and tuberculous affections are amenable to bacterial immunization, and, because of the impossibility and impracticability often of employing an autogenous bacterin, the reliable stock preparations should be used.

"Certain acute gonorrhœal infections can be benefited.

"It is questionable whether tuberculin therapy should ever be employed in very acute tuberculosis. Opinion is divided as to whether or not acute miliary tuberculosis and death supervened as a result of tuberculin therapy in one of the cases.

"The mixed infections in chronic tuberculous disease afford an important prospective field for alternating bacterial inoculations and tuberculin therapy.

"Autogenous bacterin is always to be preferred over the stock preparations, and success or failure frequently depends on this fact.

"It is believed that the best effects, therapeutically, particularly in chronic cases, occur when the quantity of bacterin is slowly and cautiously increased during successive inoculations, thereby, as has been thoroughly demonstrated in tuberculin therapy, avoiding high hypersusceptibility or anaphylaxis.

"Therapy by both bacterins and tuberculins can be satisfactorily executed by keen observance of the clinical symptomatology. Reliance on the opsonic index as a guide is not only unnecessary, but often actually conducive to erroneous conclusions, owing to its variability.

"Bacterin therapy, by virtue of its potency to do more harm than good when unskillfully managed, will or should probably not become a universal therapeutic measure in the hands of the general practitioner, unfamiliar with bacteriology or work in the laboratory. Ignorance and wantonness are incom-

patible with ambition and energy, and an otherwise meritorious therapeutic agent thus abused will ultimately fall into disrepute.

"Bacterins and tuberculins are not 'cure-alls,' but when intelligently used serve as invaluable aids to nature in fortifying the bodily defenses, thereby accelerating convalescence, diminishing complications and promoting cure."

The tuberculin reaction in the eye, according to Peter, has a distinct, though limited, field. Bandelier and Roepke have few words of commendation for the conjunctival test. Wolff-Eisner has made 4000 tests and asserts that a positive ocular reaction to tuberculin, with his technique, indicates an active tuberculous focus, while the cutaneous methods give positive findings even with latent foci. McNeil uses both skin and eye reaction, but rather favoring the former. The eye test is evidently more dangerous, and is contraindicated in the presence of eye affections and, if positive, speaks only for active processes that can be diagnosed by other methods. If negative, it is of no value, for it is not nearly so sensitive as the cutaneous test. The skin test is now regarded as a most valuable addition to the means of diagnosing tuberculosis.

Lowenstein reports favorably his experience with tuberculin treatment of 300 cases of open pulmonary tuberculosis. The main point he makes is to avoid introducing new toxins before the effect of the previous toxins has been thrown off. P. K. Pel says that he has been unable to acquire much enthusiasm for tuberculin therapy, and he declares that the failure to institute the treatment is not a sin of omission for the present. Burroughs says, "In my opinion tuberculin is of no value except for diagnostic purposes." Bullock says, "I have employed tuberculin extensively, but cannot find its place, if it has any, in the treatment of tuberculosis." Trudeau says, "I have no statistics to present beyond what the post-discharge mortality of patients at the sanitarium has shown, namely, that from 18 to 25 per cent. more of the treated than the untreated cases discharged from the sanitarium during the past 15 years were living at the time we made inquiry." Pottenger speaks favorably of the tuberculin treatment. "In the hands of careful men," he says, "the opsonic index will yield results." McFarland is opposed to the treatment, and bases his opposition on the fact that "no animal can be immunized against tuberculosis by any previous treatment with tuberculin, nor can any animal already tuberculous have its life considerably lengthened by tuberculin." Theodore Potter says, "After fifteen years in the use of tuberculin to some moderate extent all the way along and more actively lately, I confess I do not know whether it is of much use or not."

Autogenous vaccines have been extensively employed with some exceptionally gratifying results. Favorable results have been reported with the vaccine treatment in infections with streptococcus erysipclatis and streptococcus rheumaticus and pyogenes aureus. Wilcox, Morgan and Leary report favorably on the use of vaccine in pneumonia.

Oastler, speaking of pelvic infections, expresses the belief that the greatest good accomplished by bacterial vaccines up to this time is in the treatment of subacute or chronic pyæmia or septicæmia; that the acute violent cases of puerperal sepsis do not respond to the bacterial vaccines. Vaccines are indi-

cated after the acute attack where there is poor resistance, often in these turning the tide in favor of the patient; the dose is still experimental. He claims most satisfactory results with the staphylococcus aureus and bacillus coli, and less with the streptococcus. Gonococcus vaccine in gonorrhœal urethritis is disappointing. - Reviewing their treatment of 97 cases of sepsis with bacterial vaccines, Hartwell, Streeter, and Greene draw the following conclusions: First, that bacterial vaccine should be further employed in puerperal infections which do not immediately respond to routine treatment; second, that bacterial vaccines are of much value in the type of sepsis which has remained stationary for some time.

The experience of the Germans with antityphoid inoculation confirms the results reported in England and the British army. As a result of these apparent successes it is proposed to introduce the same procedure into the army of the United States.

DISCUSSION.

Dr. White said that, in addition to tests with tuberculin, he had also made tests with gold chloride solution, and found that he obtained the same reactions with the gold solution as with tuberculin, when used hypodermatically. In his opinion the Calmette test was very unreliable. In some cases it had been found that the application of tuberculin to the mucous membrane of the eye of patients who have no tuberculous diathesis whatever has been followed by a violent reaction. This had been shown in certain instances to be due to the presence of bacteria in the eye. It had recently been shown, moreover, that this reaction does not take place in tuberculous cases when the mucous membrane of the eye has been previously thoroughly sterilized and the tuberculin is applied. Hence, when the tuberculin test was to be made, the eye should first be thoroughly sterilized in order to do away with all lurking germs in the conjunctiva, and even when this precaution was taken the accuracy of the test was often questionable.

Dr. Da Costa said he was accustomed to insist on the use of autogenous bacterins as being in every way the most reliable. The method of preparing them was not difficult, but the details of the technique should be adhered to with great care. In reply to a question by *Dr. Stewart*, he said it took twenty-four hours to prepare an autogenous vaccine.

Cyclopædia of Current literature

AGAR-AGAR IN CONSTIPATION.

The use of agar-agar is advocated by the author in the constipation of children. It is a substance prepared from hot-water extracts of various species of gelidium, and contains about 60 per cent. of carbohydrates, chiefly in the form of galactosan and pentosan. Saiki obtained negative results as regards its digestibility, only about 10 per cent. of the polysaccharides being utilized, and the agar generally passing through the intestinal

canal unchanged. He found it very resistant to the action of the ordinary intestinal bacteria. Agar-agar not only absorbs water, but also retains it in its passage through the bowels, increasing the bulk of the fæces, and preventing the formation of hard masses. This, together with its resistance to bacterial decomposition, suggests its use in that form of constipation due to complete digestion of the food and complete absorption of the water from the intestinal

tract, rendering the stools very hard and dry. It has been used with good results in this class of adult patients by Mendel, Schmidt, Gompertz and others.

In adults the dosage given has varied from one-half to one ounce daily. No habit is induced and it is not necessary to increase the dose. In fact, it may sometimes be decreased with good effect. It has so little irritant action on the intestines that it is advisable to add a little cascara. The writer recommends such a mixture for the constipation of children associated with small, dry stools. He has given it to a number ranging in age from $2\frac{1}{2}$ to 8 years, with very satisfactory results. Children of 4 or 5 years need, as a rule, about two teaspoonfuls of dry flakes weighing about one dram altogether. The dose is rather indefinite, but fortunately no harm can result from either an underdose or an overdose, and after a week or two the amount necessary for an individual child is easily fixed. The only difficulty in its use has been in inducing the children to take the agar-agar, and the writer has found it easiest to give it mixed in with some cereal food. Schmidt cautions against using it in a too finely divided form, as the rapid swelling from moisture in the stomach might cause colic and diarrhoea. J. L. Morse (Journal of the American Medical Association, September 10, 1910).

ANGINA PECTORIS, ERRONEOUS NOTIONS CONCERNING.

In the writer's opinion several rather prevalent notions with regard to angina pectoris of the true cardiovascular type are without foundation. Among these are the following: 1. That peripheral arteriosclerosis, cardiac hypertrophy and high blood-pressure are always to be made out. 2. That the symptom-complex in a

patient who has an aneurism or an aortic valve lesion is not to be classed as true angina. 3. That the attacks are always few, brief, and occur only after exertion. 4. That death soon after the first attack is inevitable. 5. That the disease is practically unknown in women. 6. That pain radiating to the neck or arms is always present. 7. That the patient is never unconscious. 8. That he is always immobile and erect, sitting or standing. 9. That eructations or vomiting during an attack argue conclusively against its cardiovascular origin. 10. That nitrites are seldom, if ever, of benefit in relieving the symptoms, or *per contra*. 11. That a case in which nitrites give no relief is not true angina. J. B. Herrick (Transactions of the American Medical Association, June 8, 1910).

ARTERIAL HYPERTENSION, TREATMENT OF.

A point at present in dispute is the propriety of employing vasodilator drugs for the regulation of high blood-pressure. Attractive as the theory that high blood-pressure is a compensatory process appears, and though it is perhaps applicable to cases of contracted kidney, it fails to satisfy when applied in that large class of cases with high pressure in which no renal disease exists. The author believes that a certain measure of vascular drug therapy, properly exhibited, is applicable to these cases. In so far as high pressure is dependent on anatomical changes in the vessel walls, no influence can be exerted by drugs. But it is the added condition of spastic contraction of the vessels which causes much of the functional distress in these cases, as well as the irregularities of the blood-pressure chart, and this factor may well become the object of treatment in certain instances.

When the pressure is moderate and there are no serious subjective symptoms or physical signs, no drug interference is necessary. The higher above 200 mm. the pressure rises, the nearer impends the inevitable breakdown of heart or artery, and we should proceed to estimate what advantage we may secure by vasodilator medication. Two points must be determined before initiating vascular drug therapy: 1. The degree to which vasomotor response is retained by the arteries. 2. The functional adequacy of the heart muscle. A rough estimate of the former may be secured by administering $\frac{1}{100}$ grain of nitroglycerin, and carefully noting its effect on systolic pressure for at least one-half hour (Oliver). Should no response or but a trifling one result, vasodilator treatment will generally prove futile. In patients who have not previously experienced the action of nitroglycerin, it is better to give it in several fractional doses at short intervals than in one dose, in order to avoid the syncope or severe circulatory depression which may otherwise now and then develop.

If the blood-pressure range is excessive, and, especially if observations indicate the presence of vascular spasm, nitrites may be begun. Sodium nitrite, which is the best suited for routine use, may be begun in doses ranging from $\frac{1}{2}$ to 3 grains every two to six hours, depending on the severity of the symptoms. The dosage should invariably be small at first, and gradually increased until the effect desired is produced, or failure of the drug demonstrated. A certain proportion of cases show a reduction of from 10 to 15 per cent. in the average blood-pressure range, as well as a sensible relief of symptoms. In other cases there is no reduction, or even a slight rise, in the average pressure, though the symp-

tons may, nevertheless, be distinctly ameliorated. In Bright's disease, nitrites should not be employed, as a rule, except to meet emergencies.

For routine use in favorable cases the author recommends the following combination: Sodium nitrite, 2 to 3 grains; potassium nitrate, 10 grains; potassium bicarbonate, 10 grains, to be taken in hot water three times a day after meals (Brunton). *Spiritus ætheris nitrosi* in teaspoonful doses, several times daily, is often sufficient to modify the discomforts of high pressure. The giving of iodides with the nitrites will, at times, be found to improve arterial response. In cases with advanced arterial degeneration and impaired vasomotor tone, iodides are indicated rather than nitrites, and should be given for long periods.

In cases displaying indications of ventricular weakness, nitrites, if administered at all, should be given very guardedly in conjunction with cardiac tonics, the effect of nitrite therapy in this type of case being often to produce rapid heart action, depression and dyspnoea. Great emphasis should be placed on the dangers of overexertion. That the case shows high pressure need not deter one from using digitalis, as it is rare that in physiological doses this drug increases the pressure sufficiently to endanger the vessel wall; on the contrary, a fall in the blood-pressure under digitalis is not rarely noted. A. R. Elliott (*American Journal of the Medical Sciences*, July, 1910).

CARBONATED WATERS, NATURAL, THE CIRCULATORY EFFECTS OF BATHING IN.

For the purpose of clearing up existing doubts as to the therapeutic effects of bathing in natural carbonated waters on the circulatory system, the author con-

ducted a series of experiments in which the resulting changes in the blood-pressure and pulse-rate were recorded with scientific precision by the graphic method. The conclusions reached were as follows:—

Bathing in natural waters laden with carbon dioxide may either augment or lower the blood-pressure, according to the individual and the temperature at which the bath is taken. In subjects with high vascular tension the pressure is generally lowered, while in those with low tension it is generally raised, provided in both cases that the bath is at a suitable temperature. The concomitant action of the different factors which influence the blood-pressure is so complex that the discrepancies of effect observed clinically are readily to be accounted for by the predominance of one or other of the factors in different individuals. Slowing of the pulse is produced in all cases, whether the pressure be raised or diminished. The therapeutic effect is exerted in the period of diastole, which is prolonged. The effect persists for several hours after the bath, thus bringing about an improved state of nutrition in the myocardium.

On the whole, bathing in carbonated waters may be considered as a distinctive hydrotherapeutic procedure, exerting an action of the same nature as that of the ordinary cold bath, but with less shock to the nervous system. Wybaune (*Journal médical de Bruxelles*, June 2, 1910).

CHANCROIDS, COMBINED CAUTERIZATION AND CURETTING IN THE TREATMENT OF.

The indications in treating chancroids are to destroy the virus, remove the detritus, secure a clean sore and stimulate this sore to heal. The authors describe a plan of treatment according to these

indications which has given excellent results in their hands as a routine measure.

The lesion is cleansed with water and gauze, and cocaine or other local anæsthetic liberally applied for five or ten minutes. Next, any ordinary liquid caustic, preferably nitric acid, is flooded upon the sore, care being taken to work it well beneath the overhanging edges and into any pockets, and, on the other hand, to prevent it from reaching the sound skin. After the acid has been given several minutes to act, the lesion is wiped dry with blotting paper; then with a sharp curette the slough is removed until clean, smooth, healthy-looking tissue is reached. This surface is now systematically painted with 10-per-cent. nitrate of silver solution, special attention being paid to the overhanging edges and pockets. When this has produced a delicate white pellicle everywhere, a wet dressing is applied.

One such treatment usually converts a large and vicious chancroid into a clean, healthy surface which heals in a very few days. Sores the size of a silver quarter are often entirely healed within two weeks. When a repetition of the treatment is necessary, it is almost invariably because too little acid was used, or the acid treatment was too brief and the curetting thereafter was not deep enough. The authors present short histories of three cases of chancroids which illustrate the good results to be expected from the procedure they recommend. V. C. Pedersen and E. H. Marsh (*American Journal of Surgery*, July, 1910).

EPILEPSY, SODIUM CHLORIDE IN THE TREATMENT OF.

The phenomena of intoxication following upon the prolonged administration of bromides have been ascribed to the deficiency of chlorine in the organism

which, as is well known, is thereby produced. In experiments on animals V. Wyss was able to do away with the toxic phenomena due to bromides by administering sodium chloride. The present author makes known the results of researches carried out on man, which amply confirm the findings of the former, and claims that this salt should be employed in the treatment of bromide intoxication in preference to all other measures so far recommended. To a patient with the symptoms of bromide intoxication he gave 20 grams (5 drams) of sodium chloride twice daily. After 80 grams had been taken, all the symptoms were gone, and the corneal and conjunctival reflexes, previously absent, had returned. In another patient showing pustular acne, the result of bromide treatment, the daily use of 20 grams of salt caused the pustules to dry up on the second day and to disappear entirely in two weeks. In a third case, which showed extensive leg ulcers due to bromides, the ingestion of 20 grams of salt daily, in conjunction with salt baths, gave an equally satisfactory result.

Two grams ($\frac{1}{2}$ dram) of sodium chloride, taken three times a day, suffice, according to the author, to remove bromide eruptions and to overcome the condition of torpidity into which the patient, taking bromides, often sinks. Washing the mouth with saline solution is also useful in these cases, to relieve foulness of the breath. One or two grams of salt taken before each meal forms a good stomachic, the author finds, in bromide users suffering from gastric disturbances. He also prescribes saline baths regularly in cases of bromism. Along with the disappearance of the symptoms of bromide intoxication, epileptic spasms sometimes reappear. To prevent this the author has given chloral hydrate in the dose of 1

to 2 grams (15 to 30 grains) a day, with success.

On the other hand, many former epileptics taking bromides are subject to periods of great excitation, often with suicidal tendencies, hypochondriasis, etc., which disappear only after the patient has had one or more epileptic seizures. In such cases the author recommends the early administration of 10 grams ($2\frac{1}{2}$ drams) of sodium chloride three times a day, for the purpose of inducing spasmodic attacks, which will be followed by cessation of the alarming symptoms. He has resorted to this procedure in about twenty patients. A. Ulrich (*Münchener medizinische Wochenschrift*, May 31, 1910).

GASTRIC ULCER, TREATMENT OF HÆMORRHAGE FROM.

The author protests against the routine treatment of this condition frequently met with, in which all efforts are directed toward overcoming the depressed condition of the circulation. When the desired effect of energetic stimulation has been reached, the vigorous heart action will eventually result, he holds, in freeing a freshly formed thrombus, and thus cause a renewal of the bleeding. Experience teaches, moreover, that most cases with profuse hæmorrhage, when not ending fatally on account of uncontrollable bleeding, overcome anæmia and circulatory disturbance surprisingly well.

Of the many remedies employed in these emergencies, styptics, such as lead acetate, perchloride of iron, oil of turpentine, as well as preparations of ergot, are very unreliable, and are apt to increase the nausea and often excite vomiting. Ergot, given hypodermically, has never appeared beneficial to the author. Calcium chloride is slow in action, and will hardly exert any influence in

profuse bleeding, while the use of adrenalin has the great disadvantage that the vasoconstriction produced is followed by a period of vasodilatation, which favors renewal of the hæmorrhage. The value of gelatin preparations given per os or per clyisma is still in doubt, while for subcutaneous use, as several days are required to obtain a freshly sterilized preparation, it is likely to arrive too late. The employment of serum, as recently introduced for the treatment of hæmophilia, seems promising. The most reliable of the internal remedies is bismuth; the crystalline bismuth subnitrate is preferable, since this salt sticks to the surface of the ulcer and forms a protective coating over it.

Gastric lavage, carefully carried out, is recommended by the writer as the most expedient means of treating severe hæmorrhage. He has employed it in a series of cases with almost uniformly favorable results. The danger of causing perforation, the argument most frequently raised against lavage, he does not consider an objection of great moment, no one, to his knowledge, having ever reported a perforation as a lacerated tear through non-necrotic tissue, a finding which would prove that the perforation was a direct result of lavage. With a carefully performed lavage the danger of causing perforation by overdistention is out of the question; on the contrary, lavage exerts its greatest benefit by removing the real cause of overdistention—the large quantities of blood, acid secretions, food remnants and gas usually present in such cases. The objection to lavage that it disturbs the complete rest of the stomach is invalid, according to the author, while the bleeding continues, because then either no thrombus in the vessel has developed or, if formed, it does not completely occlude

the lumen. The removal of such inefficient thrombi is a necessity in order to give the bleeding vessel a chance to contract or to form a more efficient thrombus. In several instances the bleeding was observed to cease suddenly during the act of lavage.

As a rule, the author was able to insert the tube, even with the patient lying on his back, without causing excitement or great exertion. It is advisable to insert the tube just far enough to secure siphonage and to limit the quantity of water used each time to about 300 c.c. Lavage is very advantageous when the stomach contains large quantities of stagnating material. The fermentation present always leads to pronounced gaseous distention, so that when the tube is introduced the contents shoot out under high pressure. The evacuation not only relieves annoying symptoms of gastric irritation and causes great improvement in the circulatory disturbances, but eventually brings about a direct cessation of the bleeding by allowing the emptied stomach to contract.

With very profuse hæmorrhages, operation for the purpose of checking the bleeding may seem indicated. But with the rapidly developed exhaustion of these patients a prolonged operation must become a hazardous experiment. In order to be reasonably certain of accomplishing anything, a radical, *i.e.*, a prolonged operation, must be undertaken. The quickly performed gastroenterostomy does not answer, having proven unreliable. Even a radical operation does not always succeed in checking the bleeding. Under these circumstances the author believes that the patient stands a better chance of recovery if treated in a conservative manner, and pleads for the more frequent employment of gastric lavage as a direct means of checking the

bleeding. At all events lavage should be tried before an operation is decided upon. J. Kaufmann (*American Journal of the Medical Sciences*, June, 1910).

**HÆMOPHILIA NEONATORUM, NORMAL
HUMAN BLOOD-SERUM AS A CURA-
TIVE AGENT IN.**

Under the above heading the author reports 12 cases of "bleeding babies," all treated successfully by means of injections of human serum. In none of the cases was the hæmorrhage due to traumatism. Bleeding appeared most frequently on the second, third and fourth days of life, and took place from various areas of the skin or mucous membranes, including the root of the cord, gastrointestinal tract (vomiting of blood or bleeding from the rectum), lips and gums, etc. Post mortem the principal hæmorrhage was found either in the brain or the liver; in addition, hæmorrhagic spots in other organs and accumulations of blood in the serous cavities or spinal canal were observed in the cases examined.

The futility of calcium salts, gelatin solutions, adrenalin and other therapeutic measures in this condition is demonstrated by 17 deaths out of the 18 cases previously recorded at the Lying-in Hospital, New York. The author gives details concerning 9 cases treated by the new method, and claims that in normal human serum we have an agent that successfully controls hæmorrhage in the newborn. In the first case, in which the results obtained may be taken as typical of the rest, the baby's body had rapidly become black and blue from subcutaneous hæmorrhages; there was a large hæmatoma occupying one-third of the scalp, and bleeding from mouth and bowel, together with great weakness. Ten cubic centimeters of normal human

blood-serum were administered subcutaneously, three times during the first day and once each on the following two days. Within a few hours after the first injection the hæmorrhages ceased and the old ones began to fade. The child rapidly regained its strength and soon left the hospital in good condition.

When placed under the skin normal human blood is readily removed from the site of injection. It is possible for two ounces to be completely removed within five minutes by gently massaging the overlying skin during the injection. The author has never found such injections to cause serum sickness or anaphylaxis in the human subject. The dose of serum to be used depends upon the urgency of the case. It is advisable to begin with at least 10 c.c. and repeat 3 times per day if the infant is bleeding only moderately. In severe cases the serum should be given every two hours, and in larger quantities if necessary. It is important to begin the treatment at the first indication of bleeding, since slight bleeding of the cord may be accompanied by fatal internal hæmorrhage if not stopped immediately.

The apparatus for collecting the blood consists of a flask provided with a rubber cork, through which is passed a U-shaped glass tube connected at its outer end by rubber tubing with a short aspirating needle of No. 19 caliber. The needle is cotton plugged into a small test-tube, in which it is sterilized. Through another perforation in the rubber cork is inserted a fusiform glass tube containing cotton to prevent contamination and to which is fitted a small rubber suction tube for drawing the blood into the flask. The needle is inserted into a vein at the elbow, and the desired amount of blood obtained. The blood is allowed to coagulate in a slanting position in the flask,

and the serum withdrawn as rapidly as it separates, when it is ready for use.

The author also used injections of normal human serum in case of streptococcaemia, with apparent good effect. The patient's temperature had risen to 104° F. on the third day post partum. On the fifteenth day, when in a condition considered hopeless, she was given 20 c.c. of serum hypodermically, and on the sixteenth, seventeenth and eighteenth days each 10 c.c. She had no rise of temperature after the nineteenth day, and later completely recovered. J. E. Welch (*American Journal of the Medical Sciences*, June, 1910).

INTERMITTENT CLAUDICATION, TREATMENT OF.

In a series of 38 cases of this condition observed by the writer since the publication of his previous communication in 1904, only 8.33 per cent. were syphilitic, as compared with 22.7 per cent. in the earlier series. Alcohol seemed to play a more important part in the etiology (10 out of 35 cases). Tobacco appeared to exert a still more marked influence, 19 patients out of 35 being heavy smokers, 9 of them entirely free of other possible causative factors, such as syphilis, alcoholism, overwork, diabetes, etc. The influence of exposure was noted in only 2 cases of the series.

With regard to the treatment, the above-mentioned factors must naturally first be removed in so far as possible. The arteriosclerotic process should then be combated by means of iodide of potassium or sodium and organic preparations of iodine, always given in moderate doses. The dietetic regulations suitable in arteriosclerosis are to be imposed. The use of the galvanic current in the form of electric footbaths undoubtedly exerts a favorable influence, especially in virtue

of the condition of vasodilatation it produces. Goldfram believes high-tension currents to possess a definite therapeutic value.

The circulation through the lower extremities should be favored by keeping them in an appropriate posture by the use of hot footbaths and warm stockings worn both day and night, and by means of light rubbings with alcoholic or slightly irritating fluids.

While the usefulness of vasodilator remedies in this condition has not been definitely established, amyl nitrite, nitroglycerin or sodium nitrite may be employed. According to Gottlieb, theobromin, theophyllin and other similar remedies exerting a direct vasodilator effect on the peripheral arteries should be tried. The various antipyretic drugs, antipyrin, phenacetin, sodium salicylate, and especially aspirin, are also worth a trial, even if only as symptomatic measures. In two of the author's cases aspirin gave remarkable results. The treatment should include the administration of drugs which enhance general nutrition. Caution is necessary, however, in using general tonics, such as arsenic, as well as cardiac tonics, which should be given only in small, repeated doses, with due regard to the state of the pulse, blood-pressure and myocardium. Strophanthus and digitalis preparations, when used with care, generally exert a favorable effect notwithstanding their vasomotor action.

The patient should constantly guard against the harmful effects of exposure to cold. He should never allow his feet to remain cold or wet, and avoid cold baths of every kind. Neither is the inconsiderate use of very hot footbaths to be recommended. He should avoid making sudden and violent movements. Rest, in severe cases in bed, is an important adjuvant. After improvement has taken

place, the patient may resume activity by taking walks, gradually increasing in length. W. Erb (Münchener medizinische Wochenschrift, May 24 and 31, 1910).

JOINT TUBERCULOSIS, TREATMENT OF.

Conservative treatment, in which the two main points are to put the joint at rest and to avoid secondary infection by pus-producing germs, is especially adapted to children. For securing fixation the author prefers accurately fitted and padded plaster-of-Paris dressings to any other appliance, reserving braces for special cases, such as those with abscess. Cold abscesses, when they form and approach the surface, should be aspirated, repeatedly if necessary, and their cavities injected with one of the iodoform mixtures. Spontaneous rupture and subsequent infection should be prevented, if possible. Conservative treatment should be followed until all hope of saving a limb is gone, and then only should give place to an amputation. Resections are out of place in children, their recuperative powers justifying a hope of ultimate success until constitutional involvement forces the abandonment of conservative treatment.

In adults conservative treatment may be tried for a short time, but as a rule the best result we can hope for is a stiff joint, or, in some regions, an unsteady one, and, unless a distinct improvement is noticed in six months, resort should be had to the knife, a resection usually being performed. Curetting a tuberculous joint is useless and should be abandoned. Hitherto the general idea followed in resecting a tuberculous joint has been to eradicate every particle of tuberculous tissue, but from a careful examination of over sixty pathological specimens of joints removed for this condition, with

a comparative study of the clinical histories, the author believes that the best method of healing an adult tuberculous joint is to deprive it of motion and convert it into a synostosis. In joints where this can be done, the knee especially, the results of operation are almost uniformly good, whatever be the method of resection used. No one can be sure of eradicating every bit of tuberculous tissue. What really is done is a destruction of the joint, and *hence* a healing of the disease. The author recommends an operation for resection of the knee that aims only to secure ankylosis, leaving most of the diseased tissue behind, as of little importance after this end has been attained: The incision is made straight across the patella. This bone is sawn through and the fragments turned up and down. The lateral aponeurosis is divided, but not the lateral nor crucial ligaments. The ends of the femur are sawn off and the cartilages of the tibia removed with a chisel. The patella may be dissected out or left in. The joint is sewn up, a rubber tissue drain, if used, left in for only twenty-four hours, and the whole limb immobilized in plaster of Paris. This procedure is simpler and quicker than the ordinary resection; it sacrifices much less bone, and the ends of the bone are far more easily retained in place. L. W. Ely (Long Island Medical Journal, June, 1910).

MALARIA, THE RADICAL CURE OF.

According to the writer, malaria is perpetuated by patients carrying the plasmodium through the winter and infecting anopheles mosquitoes in the spring. Uncured malaria is therefore a menace to the community. He emphasizes the difficulty of curing different forms, particularly the *æstivoautumnal* form, and holds that the microscope is

not a criterion as to the freedom of an individual from malaria, especially during latency. Quinine should be continued until after the mosquitoes have been destroyed by the cold, while prophylactic doses should be taken the following spring. Seale Harris (Transactions of the American Medical Association, June 7, 1910).

MIDDLE-EAR SUPPURATION, CHRONIC, TREATMENT OF.

Many cases of chronic suppurative otitis media will yield to simple cleansing treatment, if it is thoroughly carried out. The ear should be cleansed at least once daily, using warm normal salt solution or a saturated solution of boric acid injected with a small rubber-ball syringe. If there is caking of the discharge, the accumulation may be softened with peroxide of hydrogen on a pledget of cotton on an applicator. After cleansing the ear must be well dried, using cotton wound applicators through a speculum. The cotton should not be used to wipe the canal walls, etc., but must be introduced gently and allowed to soak up the moisture. A very small amount of finely powdered boric acid may then be dusted in with an insufflator. The quantity blown in must not be such as to interfere with drainage. A little cotton should be placed in the external meatus to absorb the discharge. It should be changed as soon as it becomes soaked. If there are granulations in the middle ear or canal, a strong solution of silver nitrate, gr. xxx or lx to the fluid-ounce, may be applied to them after the ear has been cleansed. It should be used on a cotton pledget, through a speculum, and any excess of it carefully dried away to avoid staining the meatus. The silver nitrate often causes a temporary increase in the amount of discharge, but this gen-

erally lasts only a few hours, and is followed by a permanent diminution. If this solution is not efficacious, applications of zinc sulphate, gr. x to the ounce, or cupric sulphate, gr. v to the ounce, may be tried in its stead.

If, after some weeks, the above treatment has not checked the discharge, the instillation of alcohol should be tried. The ear is thoroughly cleansed and dried, the canal filled with alcohol through a speculum, and the patient instructed to incline the head to the opposite side for some minutes. The ear is then dried out and a little powdered boric acid dusted in. As the contact of the alcohol with the inflamed area is apt to produce pain, a solution of only about 50 per cent. strength should be used at first, then increased at the succeeding treatments until, at the third or fourth treatment, pure U. S. P. alcohol may generally be used. An instillation should be given every other day, the ear being merely cleansed and dried on the alternate days.

Where the discharge is not too profuse or fetid, the so-called "dry treatment" often proves useful. The ear is merely cleansed with dry pledgets of cotton on applicators, after which a wick of gauze is inserted through the canal. The wick is renewed as soon as it becomes saturated with pus or if pain results. In some cases judicious inflation through the Eustachian tube, with a Politzer bag, will aid in cleansing the middle ear, but this should never be done until the ear has first been well cleansed through the external auditory canal and dried.

If the perforation is too small or located too high up in the membrana tympani to permit proper drainage of pus from the middle ear, it should be enlarged by using a small earknife through a speculum, with good illumination.

Aural polypi, which are frequently seen in association with necrosis of bone, are best removed with the cold-wire snare, used through a speculum, a 5- or 10-per-cent. solution of cocaine having first been applied. When the base of the polypus can be seen after removal, it should be touched with nitrate of silver solution (1 dram to the ounce). Adenoid growths in the nasopharynx or diseased tonsils, if present, should be removed.

Where all the above measures fail to check the chronic suppurative process, necrosed bone is sure to be the source of trouble, and permanent relief can only be obtained by a radical operation for its removal. F. R. Packard (*Therapeutic Gazette*, May 15, 1910).

MYOCARDITIS, CHRONIC, TREATMENT OF.

The great majority of cases of myocarditis reach the physician only after symptoms of cardiac inadequacy have developed. The author divides the symptomatic period of myocarditis into the stage of hyposystole, in which, while signs of inadequacy are present, careful treatment may restore the organ to a good working state, and the stage of asystole, in which treatment can only result in slightly deferring an inevitable fatal ending.

In the former stage, which is generally ushered in by such symptoms as dyspnoea, præcordial pain or discomfort, palpitation, or commencing oedema, the questions of diet and of activity demand careful consideration. The true principle underlying the proper diet is quantitative control rather than qualitative restriction. Balfour emphasizes three things as especially disturbing to the heart: too large a meal, too short intervals between meals, and the ingestion of food into a stomach still digesting. In

dyspeptic and obese subjects moderation in the use of salt and restriction of fluids at meals are advisable. Regular moderate exertion will serve to strengthen the heart, but the work done must be adjusted to the functional capacity of the organ, exercise being permissible only when there is some degree of cardiac reserve. When palpitation or dyspnoea follow exertion, or when oedema has developed, exercise should be at least temporarily foregone, and rest with cardiac tonics instituted in order to restore myocardial tone. It is under these circumstances that massage, medical gymnastics and carbonic baths produce their best effects. Before beginning the administration of cardiac tonics, the blood-pressure should be carefully observed. If it is found to be high, a vasodilator remedy should first be tried, since the relaxation of the peripheral field may throw the balance in favor of the heart, and, thereafter, with rest and elimination, all may go well. Or, we may combine the administration of a vasorelaxant, such as sodium nitrite, with digitalis. If, on the other hand, no hypertension exists, we may proceed to cardiac stimulation with an easy mind. It is a good plan not to begin digitalis at the first consultation, but to send the patient home to bed, giving him a blue mass purge and a dose of niter, together with a few drops of deodorized tincture of opium. In the stage of hyposystole, moderate or tonic doses of digitalis are ordinarily alone required. Fifteen minims of the tincture or one-half ounce of the infusion may be administered every twelve hours indefinitely, with perfect safety against the risk of accumulation. Such doses give the best possible result in the end, all the benefits of digitalis action being inseparably bound up with its tonic effect. If, at the beginning of drug

treatment, the heart is in bad condition, large doses of digitalis, above the limit of physiologic safety, may, however, be required for a time to gain control over a dilated ventricle. Where the transition from cardiac adequacy to inadequacy, instead of being a gradual process, has been suddenly induced by some severe heart strain, the patient complaining of distressful subjective sensations and being in a condition of nervous apprehension and fatigue, the treatment may well begin with the exhibition of an opiate, preferably a hypodermic of morphine, which often confers striking benefit and paves the way for digitalis. Strophanthus is more purely a cardiac stimulant than digitalis. It does not produce the stimulation of myocardial nutrition and valuable diuretic effect of digitalis, owing to the fact that it has no vasoconstrictor action on the peripheral vessels. It is less irritating to the stomach, and for that reason can often be used when digitalis cannot.

In the last stage of myocarditis, that of progressive asystole, the heart has dilated, the valves become insufficient, general dropsy is present, and visceral stasis is pronounced. In extreme cases it is not possible to restore the balance of the circulation by cardiac stimulation alone. Venesection, catharsis and tapping must first be resorted to to lessen the block in the peripheral fields. The most promising cases for phlebotomy are those with a full, tense pulse; fullness of superficial veins, cyanosis and threatening pulmonary oedema. The prompt withdrawal of fifteen to twenty ounces of blood will often work a striking improvement in such cases. When the venous stasis is mainly visceral, on the other hand, the liver greatly enlarged, ascites and perhaps hydrothorax present, the pulse small and irregular, the super-

ficial veins comparatively empty and the patient unable to lie down owing to dyspnoea, free watery purgation is much preferable. Digitalis is often inoperative until several free watery evacuations have been secured. Southey's tubes or incision under aseptic precautions may render timely assistance to the heart by draining the subcutaneous tissues. Tapping an ascites or hydrothorax is indicated when accumulation is sufficient to embarrass circulation or organic function; even a moderate amount of fluid in the pleural sac should be aspirated. Much freer digitalis administration is needed to gain control at this stage than before. Nitrites are of absolutely no avail during the stage of dropsy. A. R. Elliott (*Interstate Medical Journal*, June, 1910).

PNEUMONIA, TREATMENT OF.

Failure to keep the patient continuously in the horizontal position adds greatly to the mortality of pneumonia. Rest is the principal necessity in this condition, aside from air and water. If drugs are necessary to secure rest, they should certainly be used. If a patient cannot lie still on account of pleuritic pain, morphine may save life by enabling him to rest. A patient who cannot lie down on account of dyspnoea and incessant cough, due to early dilatation of the heart and beginning oedema of the lungs, should be bled until he can lie down, and then given heart stimulants. Every case of pneumonia, and every suspected case, should be put to bed and kept flat, with the limbs extended and the hips, shoulders and head on the same level, in order to make the circulation of the blood the easiest possible, both for the heart and the vasomotor system.

There is no serious infectious disease against which the body has more perfect

means of natural defense. The great fatal factors in pneumonia are: half enough water, half enough air, half enough rest, and too much medication. G. Werley (Medical Record, April 16, 1910).

PROSTATECTOMY, THE END RESULTS OF.

From his experience in nearly two hundred prostatectomies the writer is convinced that even the most expert operators can hope for more brilliant functional restoration by the suprapubic than the perineal operation. But, whatever operation is done, the ultimate result largely depends upon the care and attention expended in clearing up existing cystitis and leaving the urethra in a healthy condition. Cystitis keeps up constant irritation of the bladder, or prevents a fistula from healing, or leads to the formation of a stone. To obtain the maximum benefit from operation many patients require months of local treatment even after the obstruction has been removed.

Immediate operative complications, such as injury to the rectum, become more remote according to the operator's experience.

Temporary incontinence of urine after operation is common, and is due to cystitis and deep urethritis, and to the relaxed condition of the sphincter muscle. The treatment for it starts with obtaining asepsis of the bladder and urethra, and ends with motor re-education of the cut-off muscle. Permanent postoperative incontinence of urine is closely dependent upon the condition in which the compressor urethræ muscle is left, and is more apt to follow an infrapubic than a suprapubic operation, because in the latter all the dissection is posterior to the posterior layer of the triangular ligament, and the muscle is out of the danger zone of injury.

Fistulæ, suprapubic or perineal, may remain open an interminable time unless the bladder is rendered approximately sterile. Stimulation of the sinus helps, but it is of small moment if an existing urethritis or cystitis is not also treated.

Retention of urine, partial or complete, may be the end result of a prostatectomy which, at first, seemed a brilliant operation. During the contracture of the cavity left after prostatic removal, a flap of mucous membrane may become shoved up so as to act as a valve and obstruct the internal meatus, as occurred in a case of the author, which had to undergo a secondary operation for relief. Post-operative cicatricial stenosis of the vesical neck may also be a cause of retention. This may develop after either a suprapubic or perineal operation, and comes on insidiously, the act of urination becoming more and more difficult until the picture is one of urethral stricture. The author has met with two cases of this kind, in which suprapubic cystotomy and retrograde instrumentation were required to find the urethral outlet. Both were treated by incision and divulsion. The infrequent passage of sounds guarded against recurrence, and both patients have been comfortable for two years. J. Bentley Squier (American Journal of Surgery, July, 1910).

PULMONARY TUBERCULOSIS, TUBERCULIN TREATMENT OF.

Tuberculin is a valuable addition to our means of treating pulmonary tuberculosis, its effects being best evidenced by a greater permanence of good results, a larger proportion of cases which lose bacilli from their sputum, and the relief from toxic symptoms, especially in chronic advanced cases. Tuberculin can do no harm when given carefully in proper dosage. No one of the more

ordinary preparations possesses any material advantage over the others.

The so-called clinical method is the most practicable guide for the administration of tuberculin in pulmonary tuberculosis, and the aim should be to produce no general reactions. The time element in treatment is more important than the absolute dosage, the latter varying with every case, and the former being never less than six and often more than eighteen months. With unimportant modifications this method of treatment is quite as applicable to dispensary and office patients as those in sanatoria. J. A. Miller (New York Medical Journal, July 23, 1910).

PURPURA CAUSED BY INGESTION OF IODIDS.

Purpuric eruptions caused by the ingestion of the iodids may be divided into two provisional groups. The first group includes the extensive petechial and hæmorrhagic, bullous cases, which occur in those individuals with organic disease, particularly of the kidneys or the heart, or with a lowered condition of the general economy, making them more susceptible to the effect of the drug, or with a strong idiosyncrasy to the same. The second group includes all cases with a localized distribution, particularly those in which the eruption is limited to the inferior parts of the lower limbs, which occur in those individuals in perfect health, and which can be explained only on the theory that a mild idiosyncrasy to the iodid is present. Sex and age have nothing to do with the occurrence of the eruption, although most of the cases developed during middle life, and a considerably larger percentage of males were attacked than females.

The drug was administered in 22 of the 61 cases for syphilis, for rheumatism

in 9 cases, and in the remainder in numerous other conditions, none of which apparently exerted any predisposing influence. The quantity of the drug given and the length of administration varied so markedly that an average dose or the length of time of continuance cannot be stated, the personal element alone deciding the question of an eruption. The eruption was chiefly of one type, either the petechial or the hæmorrhagic bullous, although in a few cases other forms of iodid lesions were present. In the hæmorrhagic bullous cases, although in several the eruption was somewhat generalized, the face and the extremities were mostly involved, particularly the face and the arms. In the petechial type the eruption in a great majority of the cases was limited to the lower extremities, particularly the lower portion of the legs; in a few cases, however, the outbreak was somewhat generalized or noted on the upper as well as the lower extremities. Mild symptoms of iodism were present in a few cases, and severe reaction to the drug was noted in two cases. Edema of the glottis was found in two instances. Lesions were found on the mucous membranes in a few cases; hæmorrhages occurred from the mucous membranes or from various organs in a few others. Organic disease of the kidneys and the heart were found in but few—10 out of 61 cases.

The various salts of iodine are all capable of causing a purpuric eruption. The pathologic changes of the skin were noted in the immediate vicinity of the blood-vessels and in the walls of the vessels themselves. Iodine is rapidly absorbed by all mucous and serous surfaces and rapidly eliminated, chiefly by the kidneys and also through the skin itself. The leucocytes play a distinct rôle in the absorption of the drug.

Hæmorrhagic bullous cases of extensive distribution are frequently fatal, 7 out of the 11 of the series quoted ending fatally. Petechial, non-bullous cases rarely terminate in death, unless there is marked disease of the heart or kidneys, or a very extreme intolerance to the drug. Two out of the 50 cases of this type ended fatally. F. C. Knowles (*Journal of the American Medical Association*, July 9, 1910).

ROENTGEN RAYS IN THE DIAGNOSIS OF DISEASES OF THE ALIMENTARY TRACT.

According to the writers, the study of the movements of the alimentary canal in this class of diseases is of so much importance that roentgenoscopy cannot be safely omitted. Roentgenoscopy and roentgenography should supplement each other. Stenoses, dilatations, new growths and displacements of the œsophagus can thereby be demonstrated. In the stomach, displacements, dilatations, constrictions and pyloric stenosis, as well as functional derangements in motility, have been demonstrated successfully. A kink in the first portion of the duodenum may give obstruction to the passage of food from the stomach and can be detected by means of the Roentgen rays. Displacements, constrictions and impaired motility of the colon can be demonstrated, and at times the cause of constipation determined. The efficiency of belts employed for supporting the viscera can and should be demonstrated by the Roentgen rays. Judson Daland and G. E. Pfahler (*Transactions of the American Medical Association*, June 9, 1910).

SPOROTRICHOSIS, MULTIPLE.

The authors report the case of a man who exhibited subcutaneous nodes re-

sembling syphilitic gummata, lesions on the tongue similar to mucous patches, iritis analogous to the specific form, testicular and epididymal nodules and exostoses in the extremities, all of which they claim to have been due, not to the *spirochæta pallida*, but to a variety of *sporotrichum*.

One year before an amputation of the right thigh at its upper third had been performed for a "white swelling" of the knee, which had reached the size of a child's head in less than four months' time. None of the animals inoculated with pus from this patient having developed tuberculosis, and in view of the unusually rapid progress of the disease and the freedom from pain, the authors believe the case to have been one of "sporotrichotic white swelling," and advise that, in the future, before proceeding to a radical intervention, the surgeon should consider the possibility of a lesion of this nature. An organism was, indeed, isolated from this patient by Brunet and Langon, who found it to differ notably in cultural characteristics and thickness of the threads of mycelium from the pathogenic *sporotricha* so far described.

The patient had for many years borne an ulcer on the right leg, which had never been adequately treated. His occupations of ragpicker and driver of garbage wagons must have been favorable to infection with the *sporotrichum*. It may reasonably be concluded that the leg ulcer served as a port of entry for the fungus, which, having become implanted in the region of the knee and lower third of the femur, eventually became disseminated in the various tissues. Jeanselme and P. Chevallier (*Société médicale des Hôpitaux de Paris; Bulletin médical*, June 22, 1910).

SUBFEBRILE TEMPERATURE IN PULMONARY TUBERCULOSIS.

Subfebrile temperature, meaning by this term slight elevations above the normal extending from about 99.3° to 100.4° F. (37.4° to 38° C.), while a cardinal symptom, is not pathognomonic of pulmonary tuberculosis. Its occurrence does not relieve the physician of the duty of thoroughly studying every aspect of the case. If the subfebrile temperature continues for months without other discoverable cause, the patient should be warned that tuberculosis is likely to develop, and a careful, well-regulated life should be advised.

When the diagnosis is definitely established, each slight and temporary elevation of temperature does not necessarily mean extension of the tuberculous process. Patients in whom the toxic effects of the growth of tubercle bacilli are at all pronounced suffer from a veritable neurosis of the temperature-regulating mechanism which makes it respond by extensive variations to the factors producing the very limited excursions seen in the temperature curve of healthy persons. This extreme sensitiveness largely disappears as the infection is overcome. Rise of temperature, when often repeated, however, and not due to complications, indicates activity of the disease, and under these circumstances the treatment must be prompt and radical. A plan widely accepted is to forbid exercise if there is repeated elevation above 99° F. Allowing a patient with incipient tuberculosis to engage in active exercise may be disastrous; while, on the other hand, a slight glandular infection or even incipient lung disease may sometimes be cured promptly by insisting on a proper regimen.

The author presents synopses of the histories of 11 cases which showed long-

continued subfebrile temperature with only slight and indefinite physical signs and few symptoms of tuberculosis. Though only one of these cases has as yet shown a marked increase in the physical signs, their rapid development in this case shows how necessary it is to keep each patient under close supervision until the general tendencies of the disease have been determined. A. T. Laird (Albany Medical Annals, June, 1910).

SYPHILIS, THE ABORTIVE TREATMENT OF, IN THIRTY DAYS.

Any case of syphilis seen by the physician within twenty days after infection, and with the initial lesion in a situation where the local injection of remedies is possible (*i.e.*, everywhere except in cavities such as the mouth, rectum and vagina), can be cured, according to the author, in a month. The plan of treatment recommended, which includes vigorous local as well as general medication, abruptly checked the progress of the disease in a series of 41 cases without a single failure. In so far as can be judged at present, the infection was entirely eradicated in each case.

As soon as the diagnosis of syphilis has been established by finding the spirochæta pallida in scrapings from the lesion, examined with the ultramicroscope, local injections, either of hectine or of cyanide of mercury, are to be administered daily. The doses to be used are, of the former, 0.20 gram (3 grains); of the latter, 0.0025 gram to 0.0050 gram ($\frac{1}{24}$ to $\frac{1}{12}$ grain). The hectine injections were found not to give much pain when a neutral preparation was used. Since hectine and the cyanide were found to exert the same abortive effect on the infection, it may be useful, the author thinks, to substitute a combination of the two substances, *viz.*: hectargyre,

which contains 0.10 gram ($1\frac{1}{2}$ grains) of hectine to 0.002 gram ($\frac{1}{30}$ grain) of the cyanide.

In conjunction with the above it is advisable to administer general treatment in the form of subcutaneous injections of benzoate of mercury and potassium iodide in order to insure destruction of the few treponemata which may have been conveyed to distant parts from the initial focus. These, indeed, also come under the baneful influence of whatever portion of the locally injected agents is absorbed.

This plan of treatment differs from the forms of intensive treatment generally employed, in that a great quantity of the specific remedy is accumulated directly in the contaminated part. Generalized infection by the treponemata is thereby antagonized. The author, for greater safety, has generally continued the treatment for thirty days, though in one of the cases twenty days were seen to be sufficient. In two cases Fouquet obtained good results with doses only one-half as great as those above mentioned and given at much longer intervals. The author is of the opinion that, after further experience with this form of medication only two weeks of treatment will be necessary. No further specific treatment is indicated subsequently, the infection having been destroyed in its incipency.

The same procedure carried out in a part recently exposed to contamination may serve to prevent infection. H. Hallopeau (*Bulletin de l'Académie de médecine*, May 31, 1910).

SYPHILITIC ARTERITIS.

Only recently has sufficient emphasis been placed on the tendency of specific arteritis to appear shortly after primary infection, and on the relative frequency

of isolated involvement of the arterial system as a lesion of syphilis. It is now held that this lesion in its pure form practically does not occur in very late syphilis, or more than three years after the initial lesion. The importance of recognition of these facts in the correct diagnosis and treatment of syphilis is sufficiently obvious. As a matter of course, it is essential to interpret correctly the symptoms of diminution of the blood supply, as shown in neurasthenia, transient paresis, etc., not extending to the gravity of organic disease. When actual hæmorrhage, softening or thrombosis occurs, the symptoms are not specially different from those from other causes, excepting the tendency of syphilis to select the branches of the middle cerebral artery for its attacks. In the writer's experience involvement of the arteries supplying the striate body, thalamus and bulb are especially frequent. A detailed report of a case going on to autopsy is given, showing these peculiarities very markedly. E. M. Hummel (*Journal of the American Medical Association*, September 17, 1910).

TUBERCULIN BLISTER REACTION.

Having discarded the conjunctival reaction with tuberculin because of two cases of serious results met with in a series of 600 applications of this test, the author has lately been using a variation of the well-known cutaneous tests, in which the tuberculin is applied to a raw surface produced by blistering the skin. The method of performing the test, which the author has used more than five hundred times, is described as follows: The skin on each side of the sternum is cleansed with ether and two blister plasters, each about one-third of an inch broad by one-half an inch long, are

applied to the chest wall. The plasters are left on for eight hours. The raised epidermal surfaces are then clipped off, and the denuded areas treated with water dressing for a few hours, or at once washed with ether and carefully dried with a sterile swab. To one of the denuded surfaces is applied a piece of sterilized oiled silk, on the under surface of which is one drop of Koch's old tuberculin, undiluted. The oiled silk is then gently rubbed over for half a minute and left until the following day. The control blister is treated in exactly the same way, save that no tuberculin is applied to the oiled silk.

In from twelve to thirty-six hours the raw surface to which the tuberculin has been applied is rosy red and possibly covered with a thin layer of pus; the margin is surrounded by an erythematous halo. The control blister is pale; it never shows any surrounding erythema if the skin has been well cleansed before the application.

The reaction may be expected if the patient is tuberculous and not in extremis. Whenever positive, the result is so manifest as to leave no room for doubt. Other advantages claimed are that the blistered surface allows rapid absorption; that the raised epidermal surface carries with it surface bacteria, and that the blister opens up the absorbent layer without penetrating into the deeper skin layers. For weeks after the skin around a positive blister is abnormally sensitive, and the reddish color produced fades slowly. The denuded surfaces both heal, however, within a few days. In some cases the tuberculin reaction is excessive, but no harm is done, the skin being dealt with, not the conjunctiva. Occasionally it has happened that a person who had previously reacted positively to a Calmette test showed a return of the conjunctivitis when the blister test was ap-

plied to the chest wall. In a few instances a second blister test was found to be positive after the first had been negative. The author considers such a secondary reaction of very little value, however, the cases in which it occurred not having been clinically tuberculous. H. de C. Woodcock (Surgery, Gynecology and Obstetrics, June, 1910).

TUBERCULOSIS, LARYNGEAL, TREATMENT OF DYSPHAGIA IN.

Alcohol injections into the superior laryngeal nerve, as first suggested by Hoffmann, of Munich, have been used by the author for the relief of pain in swallowing in a number of cases of laryngeal tuberculosis, with considerable success.

The solution used consisted of two grains of hydrochloride of β -eucaine in an ounce of 80 per cent. alcohol. The needle employed was one on Schlösser's pattern, the point being beveled off more obtusely than in an ordinary hypodermic syringe in order to avoid puncturing vessels. In giving an injection the patient is placed in the horizontal position. The affected half of the larynx is made to project by pressing the sound side toward the middle line, and the index finger made to enter the space between the thyroid cartilage and the hyoid bone from without until the patient announces that a painful spot has been reached. The needle is then pushed in at this spot for about $1\frac{1}{2}$ cm., and moved about to seek a spot at which the patient feels pain in the ear. The syringe filled with the solution, warmed to 45° C. (113° F.), is screwed on to the handle, and the injection slowly given. The patient now feels pain in the ear. During the operation he must avoid both swallowing and speaking. The injection is continued until the pain in the ear has ceased, and the needle then removed.

The author reports 6 cases of laryngeal

tuberculosis which had been selected for this form of treatment because of the extreme severity of the pain. In each the dysphagia, which had been only partly or temporarily mitigated by inhalations of orthoform and anæsthesia or galvanocaustic punctures, was entirely relieved by an injection of 1 c.c. of alcohol, so that food could afterward easily be swallowed. In one case the injection was followed by a burning pain affecting the teeth, which gradually died away, no trace of it remaining on the third day. J. Dundas Grant (*Lancet*, June 25, 1910).

TYPHOID FEVER IN PREGNANCY.

Pregnancy certainly does not confer complete immunity against typhoid as was thought years ago. Some observers think pregnancy does not modify the course of this disease, but the authors of this paper agree with Foulkrod in the belief that, in typhoid complicating pregnancy up to the fourth month, the typhoid will be the predominating factor, and the temperature higher than with a later pregnancy, whereas in typhoid occurring after the sixth month the pregnancy will prevail, so to speak, and the typhoid will be mild. Pregnancy has no marked effect on the mortality in typhoid, the increased risks incidental to abortion or labor probably accounting for the slightly greater proportion of deaths. As to the influence of typhoid on gestation, the pregnancy is terminated in about 65 per cent. of cases by abortion or premature labor. Such interruption of pregnancy commonly occurs in the second week of the disease, though it may take place during an uneventful convalescence. Transmission of disease to the foetus through the placenta is known in various infections, and occurs in typhoid, since in quite a

number of cases the bacillus has been isolated from the foetus. When such a foetal infection does occur, the result is almost invariably a pure typhoid sepsis without any lesions in the intestines or mesenteric nodes. As regards placental transmission of agglutinins, the Widal reaction was found positive in the foetus in 7 of the 25 cases on record. On the basis of clinical and experimental evidence, it can be stated that the agglutinins may either pass from the mother's blood to the foetus through the placenta, or may arise in the foetus itself after the bacilli have entered its body. Most authors do not believe in the transmission of agglutinins through the milk, in spite of the fact that human milk often possesses a moderate agglutinating power. One very convincing case of such transmission has, however, been reported. As for the management of pregnancy complicated by typhoid, the authors do not agree with those who believe in inducing premature labor before the end of the third week of typhoid fever, and think the mother's condition should make the indication for any interference.

They report a case in which the expectant plan proved advantageous to both mother and child. Typhoid fever appeared during the seventh month of pregnancy. The patient experienced comparatively little trouble, her temperature reaching normal on the twelfth day. Two weeks later premature labor came on, and the child was delivered with low forceps. The placenta appeared to be normal on microscopical examination. Cultures from it, as well as from the colostrum, were negative, and the child showed no symptoms of typhoid. The maternal blood after labor showed a positive Widal reaction in all dilutions, the blood from the foetus, from the umbilical cord and from the placenta being nega-

tive. Certain observers have found that the children of mothers who have suffered from typhoid fever or other infectious diseases during pregnancy show certain abnormalities—*anatomical, chemical, or physiological*. Thus far the child reported in the authors' paper has shown normal development. The general foetal mortality in these cases is 56 per cent. S. M. Brickner and B. S. Oppenheimer (*New York Medical Journal*, February 12, 1910).

VACCINATION.

Vaccination, when properly and adequately employed, protects one against small-pox. Even those intimately exposed to the disease, as physicians and nurses in small-pox hospitals, may be rendered completely immune against small-pox by vaccination and revaccination. It protects against small-pox in the same manner that one attack of the small-pox protects against a second attack. It has the special advantage in that the immunity which it confers against small-pox may be renewed when it becomes impaired or exhausted. In order to confer protection, it must be genuine: the mere production of a "sore arm" is of itself no proof that the subject has been successfully vaccinated. The vaccination must run a definite course before a protective substance is left in the body.

Small-pox may develop in vaccinated persons if they permit years to elapse without revaccination. Vaccination and revaccination universally applied are capable of exterminating small-pox as an epidemic disease. The experience of Germany during the past thirty-five years proves this. In isolated instances individuals in a generally well-vaccinated community may develop small-pox because their protection is imperfect as a result of the use of an inert virus or

some other fault of technique. These cases, however, will never appreciably influence the prevalence of the disease in such a community.

Small-pox was an ever-present and terrible pestilence in the days before vaccination. In most civilized centers it is to-day a relatively rare disease. This change has been effected almost exclusively by vaccination. Epidemics of small-pox prevail from time to time when the spark of infection is introduced into the community and a sufficient amount of unvaccinated combustible material exists to lead to a general conflagration. In countries where vaccination is neglected, as in Persia, Asiatic Russia, etc., small-pox is still a death-dealing scourge.

The foes of vaccination commonly refer to the infrequency of small-pox at the present day and to the remote liability of contracting the disease. They forget that the relative security which we now enjoy is the result of vaccination. This security can be made absolute or it can be largely destroyed according as vaccination and revaccination are generally employed or generally neglected. The dangers connected with vaccination have been greatly exaggerated by the opponents of this measure. Vaccination causes an abrasion of the skin and in rare instances this wound, like other wounds, may become infected, especially when neglected or maltreated. With the selection of a proper virus and care of the vaccination site during and after vaccination, the risk in any individual instance is an entirely negligible quantity. The risk connected with vaccination is infinitesimal compared with the peril of remaining unvaccinated. J. F. Schamberg (*Journal of the American Medical Association*, March 19 and 26, 1910).

Clinical Summary

Of all practical articles and abstracts that have appeared in the Monthly Cyclopædia and Medical Bulletin during the current year.

Actinomycosis. **DIAGNOSIS.** Presence of corpora flava not essential to diagnosis of this condition. Repeated examinations of suspicious material often required. Only injection of actinomycotic pus or ingestion of material upon which actinomyces is grown will reproduce actinomycosis in animals; inoculation with pure cultures unsuccessful.

TREATMENT for actinomycosis of uterine appendages: 1. Extirpation and drainage. 2. For fistula, application of tribromphenol bismuth or irrigation with copper sulphate. 3. Potassium iodide internally, up to 75 grains daily. *Wagner.* Page 290

Addison's Disease. **TREATMENT.** Begin with 3 grains of desiccated adrenal gland three times daily after meals, and gradually increase the dose till temperature and pulse become normal; then maintain last dose. *Sajous.* 75

Adrenals, Diseases of. **DIAGNOSIS.** Adrenal insufficiency is suggested by: 1. Circulatory disturbances (small pulse, low tension, tachycardia, chilliness, white line). 2. Digestive disturbances (anorexia, vomiting, diarrhoea or constipation). 3. Nervous disturbances due to toxic irritation of plexuses around adrenals. 4. General disturbances (anæmia, emaciation, progressive amyotrophy). Diagnosis confirmed by benefit from organotherapy. *Boinet.* 27

Anæmia. **TREATMENT.** Seven cases of severe anæmia greatly benefited by transfusion of only 5 cubic centimeters (75 minims) of human blood. No benefit in cases of leukæmia. Transfusion of this amount generally harmless, though blood from certain persons showed some toxicity. *Weber.* 63

In anæmia due to auto-intoxication from gastro-intestinal tract, as often occurs in chlorosis: 1. Favor gastric functions by proper diet. 2. Secure regular bowel movements by laxatives. 3. Begin use of iron, giving following pill: Subcarbonate of iron, 0.10 gram ($1\frac{1}{2}$ grains); powdered aloes 0.02 gram ($\frac{1}{3}$ grain); extract of rhubarb, 0.05 gram ($\frac{3}{4}$ grain); two pills before meals. *Huchard and Fiessinger.* 298

Gastric hyperæsthesia in anæmia and chlorosis favorably influenced in several instances by aluminium silicate, given in the form of neutralon in doses of $\frac{1}{2}$ to 1 dram in 3 ounces of water, $\frac{1}{2}$ to 1 hour before meals. *Rosenheim and Ehrmann.* 352

Aneurism, Aortic. **DIAGNOSIS.** Early positive diagnosis only by the X-ray. Expansile pulsation not constant. Abnormal

dullness a valuable sign when present. Most constant sign is systolic bruit; present in 11 of 19 cases. Tracheal tugging in but 2 cases. Earliest and most constant symptoms were dyspnoea and cough. Interference with passage of bismuth capsule the size of a quarter through œsophagus found present in every case tested (by X-rays); especially valuable in small aneurisms growing back from transverse part of arch and shows œsophageal obstruction before dysphagia appears. *Lange.* 349

Angina Pectoris. **DIAGNOSIS.** Presence or absence of signs of organic disease at root of aorta should be ascertained. Signs of general arterial or aortic disease coexisting with history of precordial pain warrant diagnosis. A slight harsh clicking sound accompanying or following the sound of aortic closure, suggesting to the ear a roughening of the aortic cusps, is of value in the diagnosis. *Butler.* 22

TREATMENT. Erythrol tetranitrate has a less marked but more lasting effect than nitroglycerin. Especially indicated in those patients who are awakened at night by the pains. *Huchard and Fiessinger.* 172

Ankylosis. **TREATMENT.** Fibrolysin used with benefit in joints ankylosed as result of rheumatic affections. Single dose used was 2.3 cubic centimeters (37 minims) subcutaneously, sometimes more; largest total amount given was 117.3 cubic centimeters (4 ounces). Untoward effects: sometimes sensation of fatigue on day of injection, and occasionally slight local inflammatory reaction, which disappeared with moist dressings. Best results where ankylosis due to extra-articular connective tissue; less improvement in presence of pus and in gonorrhœal cases. Used in conjunction with hygienic and dietetic measures, warm sulphur baths, and later active and passive movements. *Knotz.* 124

Appendicitis. **DIAGNOSIS.** Following sign often useful in diagnosis between appendiceal and pelvic inflammation: Stretching skin of abdomen slightly to increase its translucency, veins internal to anterior superior spine, and running upward and slightly inward, will be found darker than elsewhere when appendix involved. *Skinner.* 350

Appendicitis, Acute. **TREATMENT.** Where patient carried through an attack without operation, give only liquid diet till appendix removed. In perforative or gangrenous cases suffering from beginning diffuse peritonitis, gastric lavage, slow instillation of normal saline by rectum and abstinence from ca-

thartics or food by mouth are indicated; 97 per cent. can later be safely operated. *A. J. Ochsner.*

Page 360

Appendicitis in Pregnancy. TREATMENT. In severe cases operate without delay. Mild cases do not demand operation unless there are frequent attacks. When near the end of gestation or in labor, terminate pregnancy and remove appendix immediately after. *Findley.*

160

Arteriosclerosis. DIAGNOSIS. Careful ophthalmoscopic examination frequently reveals the earliest signs of arteriosclerosis. *Bruner.*

TREATMENT. In 2 cases of arteriosclerosis in diabetes, blood-pressure was lowered and arteries rendered softer by treatment with dried thymus, 30 to 120 grains three or four times daily. Author uses fresh thymus of calves, dried by himself. *Gwyer.*

424

Following method recommended: Give patient light bath for a few minutes, bringing blood to surface and causing sedation. Follow this with static breeze for five to ten minutes—helpful in asthenia. Then apply high frequency current for ten to fifteen minutes. Diminution in arterial pressure follows. Séance should always cease when pressure falls to normal, otherwise harm may result. In intestinal atony complicating arteriosclerosis, faradic current, applied over abdomen, may be helpful. Mercury, iodine, iron and arsenic also to be administered, according to indications. *Satterthwaite.*

407

Arthritis Deformans. TREATMENT. Progress of disease often stopped by removal of causes of irritation, such as inflamed appendix, hemorrhoids, etc. Where primary lesion obscure or no longer operative, best results obtained indirectly by relieving pain in affected joints. This is done by applying an absolutely rigid retention dressing, with the limb in such a position that the antagonistic muscles are in absolute equilibrium. If limbs cannot be brought into desired position without extreme pain, contractures are broken up under anaesthesia, and tendons lengthened, if necessary, by tendoplasty. Plaster-of-Paris dressing is applied, and allowed to remain until pain and irritation have subsided. A new plaster mold reinforced with basket splints and wheat gluten bandages is then substituted. *E. H. Ochsner.*

221

Ascites. TREATMENT. Autoserotherapy retards transudation into peritoneum and produces lasting polyuria. Under local anaesthesia withdraw a little fluid from peritoneal cavity with sterile hypodermic syringe, and at once reinject in subcutaneous cellular tissues. Repeat at six-day intervals, injecting progressively larger doses of ascitic fluid (3, 5, 8, and 10 cubic centimeters). Continue treatment for two months. *Audibert and Monges.*

160

Asphyxia. TREATMENT. Adrenalin, slowly administered intravenously; 10 drops of 1:

1000 solution in 1 dram of saline solution. Artificial respiration. *Sajous.*

75

Asthma. TREATMENT. To arrest paroxysms, adrenalin (5 to 10 minims of 1:1000 solution in 1 dram of normal saline) may be slowly injected into a superficial vein or hypodermically. *Sajous.*

75

Thyroid and corpus luteum preparations found valuable in 7 out of 14 cases. Thyroid beneficial in 6 cases; corpus luteum in 1. Began with dose of only 0.025 gram ($\frac{1}{4}$ grain) of powdered thyroid, given in cachet once daily; later increased to 0.10 gram ($1\frac{1}{2}$ grains). Asthmatic paroxysms ceased or were greatly diminished. Also useful in asthmatoïd dyspnoea of renal and gastric cases and in ordinary nasal asthma or hay asthma. *Léopold-Leri and H. de Rothschild.*

413

Adrenalin, given by hypodermic injection in the dose of 10 minims of the 1:1000 solution, found in a number of cases to relax the spasm of asthma instantly. When taken by mouth, ineffectual. In one case, adrenalin injections every evening in the hay season, served to ward off hay fever and accompanying asthma. *Melland.*

476

Brain Tumor. TREATMENT. A decompression operation is indicated where grave symptoms of increased intracranial pressure exist, and especially should not be delayed when papilledema (choked disc) is developing rapidly. If the symptoms do not call for immediate decompression, antisyphilitic treatment may first be tried. *Spiller.*

223

Bronchitis. TREATMENT. Menthol and eucalyptol in intramuscular injections found effective in bronchitis, gangrene of lung and many cases of pulmonary tuberculosis. Formula: Menthol, 1 part; eucalyptol, 2; castor-oil, 10. At first inject 2 c.c. (32 minims) three or four times weekly; later double strength of preparation and reduce number of injections to twice weekly. Treatment for four to eight weeks generally gives excellent results. *Berliner.*

546

Carbuncle of Face. TREATMENT. Passive hyperaemia by means of band around lower part of neck used with success in carbuncles of face and on back of neck (when high enough). Use band of rubber tissue 3 centimeters broad. Mild constriction sufficient and band should be worn 20 to 22 hours daily unless oedema appears. Relieves pain; on third day purulent discharge sets in, lasting a few days. Avoid squeezing out pus. Intervention with knife unnecessary. *Keppler.*

292

Carcinoma. TREATMENT. Quinine, stirred with water to a paste, used locally in cases of epithelioma where operation refused. Application repeated four times on alternate days. Caustic action at first exerted on ulcers, which later healed completely under simple iodoform dressing. Also useful in palliative treatment of inoperable uterine cancer. The remedy is of diagnostic value, as

on ordinary erosions it does not have the destructive effect produced on cancer. *Stroné.*

Page 94

The use of high-frequency currents found valuable in treatment of malignant growths, denuded surfaces, slowly healing wounds, and tuberculosis. On epitheliomas they exert a selective cytolytic action. Infected glands disappear, and discharge becomes odorless. Current has an analgesic effect. Time of application should never exceed 10 minutes. For internal growths current is used after operation to promote cicatrization. *Rivière.*

124

Acetone used in palliative treatment of 15 cases of inoperable uterine cancer. Hardens the tissues and stops hæmorrhage, septic absorption, and odor. After curetting under ether, solution of acetone is poured into the cavity through a conical speculum, contact with normal vaginal tissues being avoided. Hips elevated. Excess drained off through speculum and subsequently by tampon. When discharge begins again treatment is repeated without ether. Pain was not relieved but marked relief obtained from general infection. *Tovey.*

122

Carcinoma of Stomach. DIAGNOSIS. Danger-signal: middle age, loss of weight and strength, with perhaps some dull epigastric pain. If, in spite of six or eight weeks' careful treatment, symptoms increase in severity, loss of weight becomes more out of proportion to dyspepsia, appetite leaves, and some anæmia appears, diagnosis of probable malignancy is justified and operation indicated. *Deaver.*

175

Malignant disease has been demonstrated by X-rays, through its invasion of stomach-cavity and resulting changes in peristaltic waves. *Leonard.*

178

Cataract. TREATMENT. Euphthalmin hydrochlorate in 3 or 5 per cent. solution used as mydriatic in cases of bilateral cataract where central opacity precedes cortical involvement and where iridectomy for any reason cannot be performed. Vision through the uninvolved cortical portion of the lens thus becomes possible. After using one or two drops in each eye, mydriasis begins in 20 minutes and lasts 4 to 7 hours. No untoward effects observed. *Dufour.*

165

Cellulitis with Gangrene. TREATMENT. Case of diffuse phlegmon of leg with gangrene treated successfully with: 1. Linear applications of thermocautery. 2. Subcutaneous injections of hydrogen peroxide 1 to 2 centimeters above infected area. 3. Passive hyperæmia induced thrice daily by rubber bandage above knee. 4. Daily bathing of part in warm permanganate solution. 5. Wet dressing of hydrogen peroxide. *Petit.*

173

Chilblains. TREATMENT. 1. Measures to allay co-existing irritative influences originating in various portions of body, as the nasopharynx, teeth, respiratory or digest-

ive tracts, etc. 2. Gymnastic exercises of extremities at hourly intervals. Arms raised above head, with alternate flexion and extension of hands and fingers. Similar movements of lower limbs. 3. Protection from cold. 4. Kneading, after raw surface of chilblain has become covered. *Jacquet and Jourdanet.*

162

Cholecystitis. TREATMENT. Irrigation with normal saline solution, at the rate of about six drops per second and with elevation of one foot, of biliary fistulæ, after drainage of gall-bladder for cholecystitis, cholelithiasis or cholangitis: 1. Produces prompt diuresis. 2. Hastens disappearance of chronic jaundice. 3. Often relieves postoperative biliary vomiting. *McArthur.*

87

Curable by diet and hygiene or operation. Cholecystostomy usually adequate. Cholecystectomy when gall-bladder gangrenous or duct completely obstructed; should be performed several months after primary cholecystostomy. *B. Holmes.*

292

Cocaine Poisoning. TREATMENT. Administer ether by inhalation, only to the degree of mild surgical narcosis or even less. Employ a mask and give anæsthetic by drop method. Probably also valuable for poisoning by stovaine or other synthetics. *Engstad.*

414

Colitis, Chronic. TREATMENT. Rectal use of hot solution of gelatin beneficial in obstinate cases of catarrhal colitis with diarrhæa. First give enema of one pint of water at 25-28° C. (77-82° F.), and when this is evacuated, have patient rest half to three-quarter hour. Then introduce through nozzle four or five inches long 40 to 80 cubic centimeters (1¼ to 2¾ fluidounces) of 10-per-cent. solution of gelatin in Carlsbad water (Sprudel) at 45-52° C. (113-125° F.). Patient lies on back for two hours with warm application over abdomen. Fluid usually retained. *Aldor.*

415

Collapse from Hæmorrhage. TREATMENT. Suprarenalin or adrenalin given very slowly by intravenous method. Use 5 minims of the 1:1000 solution to a pint of warm saline solution (105° F.). In urgent cases, 10 drops may be given in 1 dram of saline solution, and repeated at intervals until heart responds. Artificial respiration hastens effects. *Sajous.*

75

Collapse in Infections. TREATMENT. Obscure collapse in infections often due to adrenal insufficiency. As soon as asthenia and lowered blood-pressure appear, administer adrenalin solution (1:1000) or cachets of glandular extract. In children give 10 to 20 drops of 1:1000 solution daily, divided into 5 or 6 doses. *Moizard.*

160

Constipation. TREATMENT. Appendicostomy considered as indicated in: 1. Cases of severe atonic constipation where colon much dilated and sacculated. 2. Cases of obstructive constipation where obstruction cannot be

directly dealt with, *e.g.*, where inseparable adhesions between viscera and abdominal wall. 3. Cases of congenital dilatation of the colon, as alternative to resection of bowel. Instances of favorable results from appendicostomy mentioned. *Mummery*. Page 415

Where hard feces accumulated in rectum, mucous membrane excoriated, and sigmoid tender, wash out rectum and colon with several quarts of hot water containing a few drams of sodium bicarbonate, borax or boric acid, introduced slowly with patient in knee-chest position, or with hips elevated. Then inject half tumblerful of oil in rectum and leave over night. *Tyrodé*. 416

Coryza. TREATMENT. Sodium salicylate causes a cold to abort if taken within 24 to 36 hours. Single dose of $7\frac{1}{2}$ grains (0.5 gram) often suffices. Taken later, it relieves symptoms and shortens attack. It is also valuable in the chronic coryza of gouty subjects. Should be taken after eating, and preferably in small doses, dissolved in half a glassful of water. *Courtaudé*. 174

Cystitis, Acute. TREATMENT. Collargol beneficial when used locally in this condition or in pyelitis. *Albrecht*. 234

Cystitis, Chronic. TREATMENT. 1. Where urine acid, alkaline diuretics and mineral waters; where urine alkaline, urinary antiseptics, *e.g.*, capsule containing 5 grains each of urotropin and salol. 2. Local treatment: bladder irrigations. Empty bladder, introduce soft-rubber catheter and introduce warm solution of one grain each of silver nitrate and potassium permanganate in a pint of distilled water, until bladder comfortably distended. After evacuation, repeat the process. Then inject $\frac{1}{2}$ ounce of one of silver salts, to be retained. *Christian*. 416

Delirium Tremens. TREATMENT. Veronal used in 100 cases, and all but 3 benefited. Initial dose of 1 gram (15 grains) in incipient cases, repeated in 3 hours if sleep does not follow. Sleep then usually lasts 6 to 8 hours and on waking patient is quiet and feels well. If tremor is still present. 0.5 gram ($7\frac{1}{2}$ grains) veronal may be given. The same dose every evening prevents insomnia. Where delirium is not controlled by the first 2 grams, another gram may be given 5 to 6 hours after the second dose. One case of veronal rash noted. *Möller*. 88

Diabetes. TREATMENT. Phosphoric acid preparations valuable in diabetic cachexia. Phosphoric acid, 75 grains; acid sodium phosphate, 150 grains; distilled water, 10 ounces; one tablespoonful in water at every meal. Contraindicated where albuminuria. *Cautru*. 163

Calcium iodide used in 17 cases in doses of 5 to 15 grains three times daily, after treatment with codeine and diet had proved unsatisfactory. In all cases subjective symptoms were improved and amount of sugar in urine diminished. *H. E. Smith*. 164

X-rays projected over hepatic region cause decrease in glycosuria and rise in red blood corpuscles. In one case amount of sugar passed daily was reduced by 400 grams. Particularly effective in grave forms with emaciation and debility, less so in mild cases and those of obese type. *Ménétrier, Touraine and Mallet*. 178

Diarrhoea, Dyspeptic, of Infancy. TREATMENT. Calomel, one grain in broken doses, followed in 2 hours by castor oil, one dram. Daily irrigation of colon. If much vomiting, wash out stomach and colon, and follow by starch enema not exceeding 2 ounces. For two days give barley water, 2 fluidounces every 2 hours; for next two days, whey, 2 fluidounces every 2 hours. *Holloper*. 97

Digalen. This form of digitalis is not invariably free from cumulative effect, as has been claimed, but is better borne by the stomach than the galenic preparations. *Mayor*. 164

Drowning. TREATMENT. Adrenalin, 10 drops of 1:1000 solution in 1 dram of saline solution, slowly administered intravenously. Repeated at intervals until heart responds. Artificial respiration. *Sajous*. 75

Duodenal Ulcer. DIAGNOSIS. In cases of epigastric pain coming on some time after meals, presence of Cammidge's C reaction shows probable existence of a duodenal ulcer rather than a functional hyperchlorhydria in stomach. Five cases in which reaction was positive and duodenal ulcer found at operation. *Herschell*. 293

Dysentery, Amœbic. TREATMENT. 1. Rest important, even using opium if required. 2. Calomel at first where patient strong, then magnesium sulphate, 1 dram every 3 hours, as long as scybala being passed. Purgatives bad, however, where initial symptoms very acute, and in late stages. 3. Ipecac, in capsules of animal membrane or salol-coated pills; 30 grains in one dose on first day, reduce by 5 grains on each succeeding day until sixth, then give 5 grains nightly for a week or 10 days longer. Patient should fast 4 hours before taking the remedy, and remain quiet afterward. 4. Colonic irrigations hardly give better results than ipecac. Best is quinine 1:5000, increased to 1:1000; next to quinine is silver nitrate. Have fluid retained 15 to 20 minutes. 5. Appendicostomy where refractory to rectal irrigations. Marked success in 2 cases, using quinine or saline solution through fistula. Perform operation in two stages: first bring base of appendix against abdominal wall, stitching meso-appendix to peritoneum; 48 hours later, apply cocaine to appendix, snip off with scissors and introduce No. 10 rubber catheter. *Anders and Rodman*. 290

Dyspepsia of Old Age. DIAGNOSIS. Of every 100 cases in persons over 65 years of age, 66 are secondary to organic disease of some important organ (kidneys, prostate, heart, lungs, liver, pancreas, chronic gout,

etc.); 34 are due to degeneration of gastric and intestinal secretory structures. *Fenwick*.
Page 24

Eclampsia. TREATMENT. Bilateral renal decapsulation employed in three dangerous cases with excellent results, after other measures had failed to bring on diuresis. *Lichtenstein*. 294

Eczema. TREATMENT. X-rays of value in subacute and chronic forms. In vesicular variety, mild applications suffice; in squamous and pustular eczema, more vigorous treatment required. Eczema of lips, ears, axillæ and anal region especially adapted for X-rays; itching relieved. Seborrhæic eczema of face also benefited. *Müller*. 239

Emissions, Nocturnal. TREATMENT. Styptol (cotarnine phthalate) found to prolong interval between emissions to from one to three weeks in all cases. Two, then three, styptol tablets of $\frac{3}{4}$ gram each administered before retiring, for a month. Fluidextract of hydrastis, 40 to 60 drops before retiring, also recommended. *J. Koenig*. 127

Epilepsy. TREATMENT. Diet low in proteins caused reduction in number of seizures by 14 per cent. Each of the three daily meals given consisted of 125 grams of bread, 16 grams of butter, and 250 cubic centimeters of milk. *Rosanoff*. 89

Exploratory trephining advised in traumatic epilepsy. Eleven cases operated, four of idiopathic and seven of surgical epilepsy. Cysts found in two instances, cicatrices in four, and œdema of pia in all. Improvement resulted in all the cases from removal of œdematous fluid. Epileptic attacks returned in four cases. *Tilmann*. 127

Epithelioma. TREATMENT. Commercial 40 per cent. formaldehyde solution applied in two cases with successful results. After three applications dead neoplastic tissues separated, leaving granulating surface, which later healed completely. Pain obviated by injections of 1 per cent. novocaine solution. No recurrence in ten months. Method suitable for comparatively small lesions without lymphatic involvement, where patient refuses operation. *Hallopeau and Fumouze*. 294

Extra-Uterine Pregnancy. TREATMENT. In first half of an ectopic pregnancy operation for removal of gestation sac is indicated wherever conditions permit. In latter half, however, patient, under favorable surroundings, should be allowed to go within two or three weeks of term before operation, meanwhile being kept under watch. Removal of placenta at operation is of cardinal importance; if this be impossible, placenta should be shut off from peritoneum by gauze. Dependent drainage through vagina should be secured. *Peterson*. 225

Felon. TREATMENT. Operation advised as soon as diagnosis made. Patient should eat a substantial meal before the operation, and

remain in recumbent posture until half an hour after operation is over. After applying tincture of iodine, inject sterile 1 per cent. cocaine solution in a circle at root of finger; as much as 3 or 4 grams (45 minims or 1 dram) of solution may be used. If felon very small, inject instead around lesion itself, 1 centimeter from its margin. Five minutes later incise, irrigate with hydrogen peroxide and establish drainage. Rest of treatment includes bathing of part in warm peroxide (1 in 4) and sterile compresses of same. *Appelmann*. 167

Femur, Fracture of. TREATMENT. Combination of Buck's weight and pulley system with suspension by the Hodgen splint gave very satisfactory results. Traction can be accurately measured and maintained, transverse displacement corrected, and comfort greatly increased. After extension is applied, the supporting bands attached to splint are passed under limb, which is then swung clear of bed. Supporting bands are adjusted to make support uniform, and later, if desired, to exert coaptative pressure anteroposteriorly or laterally on the fragments. *Stimson*. 226

Fibroids, Submucous. DIAGNOSIS. Gradually increasing dysmenorrhœa and menorrhagia, with consequent anæmia and "nervous debility," are typical symptoms which, in a woman of thirty years or over, should lead one to suspect this condition. In differential diagnosis, enlarged uterus from subinvolution, metritis, endometritis, and pregnancy should be considered.

TREATMENT. When submucous fibroid large and sessile: hysterectomy. Vaginal operation limited to removal of polypi, owing to importance of exploration of pelvis and abdomen where tumor of some size. Transperitoneal enucleation slightly increases operative risk, but if desired by patient in order to preserve uterus, may be performed. *Truesdale*. 225

Fibrolysin. Best given by intramuscular injection in dose of 35 minims (2.3 cubic centimeters), every other day. Desired solvent effect on local connective tissues is kept up by massage of the part. Connective tissue surrounding old infectious foci may also be affected and dormant bacilli set free; hence it is well to search for and exclude previous inflammatory disturbances in every case before using this remedy. *Stocker*. 167

Furunculosis. TREATMENT. In furunculosis, carbunculosis, acne and subcutaneous abscesses brilliant results from vaccine therapy can be expected. In chronic cases, best results when a fresh vaccine is prepared from the pus every two to four weeks. Cautiously increase dose at successive inoculations. *Thomas*. 161

Gallstones. DIAGNOSIS. Too often delayed. In most cases condition begins before fortieth year. Almost every patient will give history of long-standing dyspepsia, capricious

appetite, constipation, flatulence largely independent of meals, and discomfort when stomach is empty. Later, acute attacks of pain in right upper abdomen may appear, and finally true biliary colic, with vomiting. Sensation of chilliness is characteristic. Jaundice, hæmatemesis, etc., as well as laboratory methods, are practically valueless for purposes of early diagnosis from gastric and duodenal ulcer. *Deaver.* Page 175

Gangrene, Diabetic. TREATMENT. Currents of air heated to 150°, 300°, 500° C., or even higher, applied repeatedly, found to prevent extension of gangrene and arrest toxic absorption by producing carbonization of the part. Amputation can then be performed with greater safety. *Dieulafoy.* 223

Gastro-enteritis of Bottle-fed Infants. PROPHYLAXIS. 1. Certified milk or clean milk fresh from cow; if neither available, Pasteurization. 2. Fresh air. 3. Avoid overheated rooms. In hot weather child should be placed out-of-doors at night on properly screened porch. 4. Avoid overfeeding by giving boiled water to drink. 5. Light clothing and frequent cool bathing. 6. Destroy flies.

TREATMENT. 1. Withhold food for three days; then give barley-water. 2. Have child rest quietly in bed out-of-doors. 3. Wash stomach with boiled water at 100° to 110° F., with a little lime-water added. Before withdrawing tube introduce 2 drams of castor-oil and give thorough colonic irrigation. In cases seen later stomach washing not indicated unless gastric irritability present. After stomach settled give cool boiled water freely by mouth. 4. Colonic irrigations every 4 hours on first day, and later twice daily. Nutrient enemata every 4 hours, following irrigations. Be cautious with cathartics. 5. Tub-bath, lasting 10 to 20 minutes, to control temperature and restlessness. 6. Drugs: Bismuth subnitrate, 1 to 2 drams daily, in a child of one year. Salol, 1 to 2 grains every 3 hours. Opium where pain and continued frequent stools. Brandy in boiled water where prostration; ½ ounce in 24 hours. *Hulse.* 295

Glycosuria. TREATMENT. Glycosuria in elderly persons often results from only a certain few carbohydrates used in excess, especially cane-sugar and wheat-starch. Management consists in ascertaining the harmful ones and removing them from diet. Cut off all carbohydrates for a week, and if glycosuria disappears try oatmeal, at first with water containing saccharin or with butter, later with rich cream. Then try potatoes, peas, beans, etc., one by one, examining urine frequently. Open-air treatment of great value. *Vaughan.* 296

Goiter, Exophthalmic. ETIOLOGY. Acute rheumatism occupies an important place among infections which lead to development of Graves's disease. *Souques.* 165

TREATMENT. Previous to operative inter-

vention: 1. Rest cure interrupted by systematic exercises. 2. Sojourn at some resort having elevation of 1000 to 1500 meters (3300 to 4900 feet). 3. Diet poor in albumin and fats. 4. Cool baths and lotions. 5. Internally, phosphorus, arsenic, and iron. Avoid measures producing rise in blood-pressure, as well as active diuretics. *A. Kocher.* 417

Case under observation for one year showed continued improvement under treatment with dried powdered thymus, 30 to 120 grains three or four times daily. *Gwyer.* 424

TREATMENT. Intravenous injections of iodine and arsenic recommended. Two c.c. (32 minims) of following solution to be injected repeatedly: Atoxyl, 1 gram (16 grains); iodide of sodium, 4 grams (64 grains); distilled water, 20 c.c. (5 drams). *F. Mendel.* 542

Gonorrhœa. TREATMENT. Vaccine therapy caused marked improvement or cure in subacute and chronic cases. Functional results good. *Thomas.* 161

Hæmorrhage. TREATMENT. Adrenal preparations valuable in capillary hæmorrhage from pharyngeal, œsophageal, gastric or intestinal mucous membranes. Mastication of tablets of adrenal substance, or ingestion of 5-grain capsules of same, causes vaso-constriction. *Sajous.* 75

Artificial gelatin made by combining gum arabic with perchloride of iron, then sterilizing the whole, very efficient when injected hypodermically, increasing coagulability of blood more actively than calcium chloride. *Ciuffini.* 292

Hæmorrhage in Bladder Operations. PROPHYLAXIS. About fifteen minutes before operation tie off all four extremities close to the axillæ and inguinal regions with gauze bandages. When skin of extremities begins to turn blue start operation, which will be remarkably dry. Useful for prostatectomy or removal of bladder tumor. No untoward effects. Less anæsthetic is required in operation, and healing of wound seems to be accelerated. *Kolischer and Kraus.* 418

Hæmorrhoids. TREATMENT. In 3 cases of bleeding hæmorrhoids treatment by thymus. 30 to 120 grains of fresh dried gland, three or four times daily, caused great diminution or cessation of hæmorrhages, and improved state of blood. *Gwyer.* 424

Hæmorrhoids often due to proctitis. Where this is the case: 1. Arrest fermentation and overacidity with intestinal antiseptics and alkalies. 2. Prohibit rich foods, and restrict carbohydrates to relieve liver. 3. Prohibit stimulants. 4. Encourage exercise or rest as indicated. 5. Irrigate rectum daily for a week with a gallon or more of water at 110° F., each irrigation lasting fifteen minutes. In presence of subacute or chronic proctitis, follow this by injection every second or third day of a weak solution of a silver salt, or else prescribe a suppository or ointment containing

ichthylol or iodoform, tannic acid, adrenalin or Lamamelis, and belladonna or stramonium. *Bodkin.*

Page 543

Hammer Toe. TREATMENT. OPERATIVE. Apply Esmarch bandage. Incision $1\frac{1}{4}$ inches long at outer aspect of plantar surface of toe, with center at flexed joint. Dissect skin flaps laterally and continue incision through subcutaneous structures, avoiding artery and nerve. Dissect flexor sheath free from joint, hold it aside, and remove articulating joint surfaces with chisel. Allow subcutaneous structures to fall back in place, hold them by a few fine buried catgut sutures, close skin incision, and dress. Apply plaster-of-Paris bandage fixing toes in hyperextension, making flexor tendons tense, and holding bony surfaces in apposition. After ten days split plaster bandage, and expose field of operation. Then restore dressings and keep in original position for six weeks. *Soules.*

352

Heart, Dilatation of. TREATMENT. In asthenic cardiac disorders with dilated right ventricle, dyspnoea and possibly cyanosis and oedema, the adrenal principle improves oxidation and metabolism in the cardiovascular muscles and tissues at large. Tablets of $\frac{1}{2}$ to 2 grains of desiccated gland after meals. *Sajous.*

75

Heart, Neuroses of. TREATMENT. In cardiac irritability: 1. Caffeine citrate and tincture of strophanthus, both best given in tablet-triturate, are promptly effective. Caffeine relieves headache and vertigo when present. Cactus useful in some cases; acts more slowly. 2. Local applications, as cologne, spirits of camphor, ammonia. 3. Light and easily assimilable diet. Avoid meats. 4. Quiet and rest for weeks at a time. 5. Nerve tonic: combined glycerophosphates of lime and soda, gr. v-x t.i.d. after meals. 6. Where gastric or intestinal intolerance: milk of bismuth or lactobacilline tablets. 7. To promote sleep: gentle massage of lower limbs before retiring. If hypnotic required, bromural, gr. v-x. *Beverley Robinson.*

163

Hepatic Cirrhosis. TREATMENT OF HÆMO-RRHAGE IN DIGESTIVE TRACT. Prophylactic: 1. Diet of milk, given only in small amounts, frequently repeated. 2. Avoid all exertions or nervous impressions which might raise tension in portal system. 3. Systematic saline purgation. 4. Leeching, at times, to reduce blood-pressure.—Curative: Hæmostatic remedies together with vasoconstrictors or coagulants according to indications. Ergotin, calcium chloride, gelatin injections, and especially injections of fresh antidiphtheritic or other antitoxic serum. *Rauzier.*

353

Hernia. TREATMENT. A truss never cures a hernia in adult life, and rarely during childhood. Losses from disability due to hernia avoided only by early radical operation. *A. C. Wood.*

20

Hyperchlorhydria. DIAGNOSIS. Excess of

free HCl alone does not warrant a diagnosis of primary hyperchlorhydria, which shows variable symptoms, both gastro-intestinal and nervous. Though 31.6 per cent. had lost weight, the appetite was generally good and examination of the gastric contents and faeces showed that digestive power was but little impaired. The nervous manifestations included periods of depression and mental confusion, irritability, various phobias, numbness, paræsthesias, and attacks of faintness. Male sex and constant mental strain seemed to be predisposing factors. *G. M. Piersol.*

65

TREATMENT. Aluminium silicate in the form of neutralon found effective in all cases of gastric hyperacidity or hypersecretion, whether of neurotic or organic origin,—especially where persistent hypersecretion with motor insufficiency. It reduced acidity, relieved pain and aided digestion. Acts as a protective and astringent to mucosa. Dose, $\frac{1}{2}$ to 1 dram in 3 ounces of water, $\frac{1}{2}$ to 1 hour before meals. *Rosenheim and Ehrmann.*

352

Ileus, Paralytic. TREATMENT. Atropine found valuable in 8 cases. Inject 1 milligram ($\frac{1}{64}$ grain) hypodermically and follow shortly after by a stronger dose of 3 to 5 milligrams ($\frac{1}{22}$ to $\frac{1}{12}$ grain). Improvement and abundant faecal discharge within ten hours. *Lederer.*

229

Infant Feeding. Salts of cow's milk sometimes cause tendency to convulsions; treat by temporary salt-free diet. Sugar intoxication or intolerance of fats may likewise exist; treat by elimination of these from diet. *Neff.*

Insomnia. TREATMENT. Pituitary preparations especially indicated when there are low blood-pressure, general weakness and chilliness, and patient is quiet. Dried pituitary extract, in doses of 0.20 to 0.40 gram (3 to 6 grains), taken an hour or less before retiring, found promptly effective. Best used intermittently, since action fugacious. When it is found that hypnotic effect is being lost, small doses of trional or veronal may be given to sustain it. *Sardou.*

545

Intestinal Protein Indigestion. TREATMENT, DIETETIC. Cut proteins to a minimum, give chiefly cereals and other starches, and supply assimilable fats guardedly. A little lean meat or milk, or vegetables rich in protein may, however, be allowed to avoid loss of weight. Gelatin, junket, whey, and buttermilk often valuable. Fermented milks especially useful when stomach also deranged and in gout and arteriosclerosis. Where hyperacidity and spasmodic pain prominent, give hot olive-oil. Forbid tea, coffee, and alcohol, and encourage drinking of distilled water. **MEDICINAL.** 1. Cleanse bowel at once with calomel or calomel and podophyllin, followed by a saline. To keep bowel clean, use phenolphthalein in tablet form or as syrup; one or two tablets every night sufficient, and later to be reduced in frequency. Foods like shredded

wheat, also systematic deep breathing, will assist drugs. 2. Bile-salts, as cholagogue and to relieve such symptoms as offensive breath, coated tongue, etc. 3. Ferments, kept up several months. Alkalies where fat not well digested. 4. Intestinal antiseptics, as salol, naphthalene tetrachloride, some guaiacols, creosote, sulphocarbolates, or agar soaked in hydrogen peroxide and flavored. 5. Where hyperchlorhydria, give eumydrin ($\frac{1}{15}$ grain or 0.001 gram t. i. d.), combined with sodium citrate. Where deficient gastric secretion, try suprarenal extract, or the old and well-known measures. 6. Tonics, especially at outset, avoiding strychnine. *Thayer and Turck.*

Page 418

Intussusception. TREATMENT. Lateral anastomosis performed in 2 acute cases and advocated in preference to resection because of its comparative simplicity and safety. Tumor was found to disappear subsequent to operation. Not applicable, however, to gangrenous cases. *Parry.*

125

Iodine. As skin disinfectant. Some hours before operation field is shaved dry and painted with 10 or 12 per cent. tincture of iodine. Dry sterile dressing. Painting repeated on operating table. Author shaves and thoroughly cleanses skin 12 hours before iodine applied. Primary union in every case. *Jewett.*

63

Larynx, Fracture of. TREATMENT. Cases divided into three groups according to indications for tracheotomy: 1. Mild cases; fracture often incomplete and detected only on careful palpation. Keep patient under close watch. 2. Serious cases; marked dyspnoea, sometimes hæmoptysis. Immediate tracheotomy indicated. 3. Cases of intermediate severity. Preventive tracheotomy should be practised whenever patient cannot be kept constantly under watch. *Michel.*

351

Leprosy. TREATMENT. Oil of chaulmoogra is best given as a saponified preparation, in keratin-coated pills; the purified oil can also be injected in doses of 1 gram three times a week. Nastin injected in doses of 1 cubic centimeter gave good results. Great persistence in treatment, even after relief of symptoms, found advisable. Local treatment by resorcin, hydrogen peroxide, ichthyol, thiosinamine, etc., and baths, also useful. *Kupffer.*

169

Leukæmia. TREATMENT. In leukæmia of essentially splenic type, Roentgen ray treatment, skillfully employed, is the most prompt and certain means of reducing leucocytosis, bettering anæmia and improving general health. Iron and arsenic still believed to have a place in the treatment. *Wilcox.*

387

Lupus Erythematosus. TREATMENT. Constitutional: regulation of diet to avoid overloading intestine; coffee or tea contraindicated; quinine often useful. Local: in hyperæmic stage, cooling lotions and ointment of subacetate of lead, ichthyol lotion or oint-

ment; in chronic cases, strong solution of ichthyol or iodine liniment; in severe conditions, linear scarification or light touches of thermocautery. High-frequency currents in subacute cases, Finsen light, X-rays or radium in chronic cases: particularly useful where thickening of the integument. *Morris.*

63

Malarial Fever. TREATMENT. Following measures found best in treatment of tropical malaria: In mild æstivo-autumnal infections, give 3 grains of calomel on admission, with 20 grains of quinine in solution or capsules. Follow calomel by salts next morning. Give 10 grains of quinine t. i. d. for a week, then reduce dosage to 5 or 10 grains per day. To relieve headache, ice-cap. On discharge patient is advised to take 10 or 15 grains of quinine once a week for a few weeks. In severe æstivo-autumnal infections, nausea and vomiting prevent administration of quinine by mouth; therefore give it hypodermically: Make skin of buttock surgically clean, boil needle and syringe but not quinine solution; plunge needle deeply into muscle at right angles to skin, and inject slowly. Close puncture wound with collodion. Abscesses very rare. Give 15 grains of quinine, hypodermically, every four hours up to 75 grains, or until vomiting has ceased. Sometimes after first or second injection all symptoms are relieved; stop injections and give 10 grains t. i. d. in solution or capsule. Tablets often not absorbed. *Shook.*

336

Meningitis. TREATMENT. Early relief from excessive intracranial pressure by means of lumbar puncture advocated in treatment of uncomplicated cases of all forms of meningitis, including tuberculous. Earliest possible recognition of pressure symptoms required, for which purpose total and differential leucocyte counts are of value. Four cases of meningitis reported (including one tuberculous), which recovered after lumbar puncture. *Hultgen.*

298

Meningitis, Cerebrospinal. TREATMENT. Case of an infant two months old reported, in which tapping of lateral ventricles and intraventricular injections of antimeningococcus serum led to complete recovery. *Fischer.*

129

Metrorrhagia. TREATMENT. Excessive menstrual discharge in young girls, due to blood changes, often arrested by following: Subcarbonate of iron, 0.10 gram ($1\frac{1}{2}$ grains); ergot (Bonjean), 0.05 gram ($\frac{3}{4}$ grain); quinine hydrobromide, 0.01 gram ($\frac{1}{16}$ grain; extract of belladonna, 0.005 gram ($\frac{1}{2}$ grain); two pills before meals. *Huchard and Fiesinger.*

298

Myasthenia Gastrica. TREATMENT. 1. Remove causative factors, as excesses or nerve-strain, if these are evident. 2. Exercise, either out-of-doors, or as special movements to strengthen abdominal muscles. Follow morning exercises with cold shower bath or plunge. 3. Rest in bed for a week,

where muscular relaxation marked. If this not possible, use some form of abdominal support, as by Rose's belt of adhesive plaster, to be worn two weeks. 4. Gastric lavage with cool saline solution, not exceeding eight ounces. 5. Mixed diet, consisting of carbohydrates in the form of cereals, toast, rolls and crackers, and vegetables; proteids, as meats, eggs and milk; fats, as butter. Cooked fruits and a little ripe raw fruit allowable. Interdict sweets, and limit fluid intake to 6 ounces with each meal. Avoid overloading stomach at any given time; allowing three light supplementary meals daily, if necessary to secure this end. Patient should lie down for one hour after meals. In severe cases, rectal feeding for a few days. 6. Drugs. The best are strychnine phosphate, gr. $\frac{1}{30}$, extract of ergot, gr. j, extract of coca, gr. ij, extract of physostigma, gr. $\frac{1}{6}$, and hydrastin hydrochlorate, gr. $\frac{1}{4}$, taken fifteen minutes before meals. *Chace.* Page 356

Nævus. TREATMENT. Small, red, arterial nævi respond well to radium. Large, superficial, purple, capillary nævi indicate use of mercury quartz lamp. Mixed nævi of moderate size should be treated by both methods. Give not more than two or three exposures with radium, nor more than four or five with lamp. Time of application not to exceed one hour. Results better than with X-rays. *Kromayer.* 420

Nausea, Postanæsthetic. TREATMENT. Olive oil given by mouth in thirty cases of ether anæsthesia, after partial restoration of consciousness. In only one patient was nausea observed after its use. Where nausea had already begun it was at once checked by administration of the oil. *Graham.* 91

Nephritis, Acute. SURGICAL TREATMENT. Case of severe acute nephritis in a man 25 years of age, with no urine passed for 5 days, saved by decapsulation of both kidneys (Edebohl's operation). A few hours after operation both kidneys resumed function. *Karo.* 43

Nephritis in Childhood. TREATMENT. 1. Diet. For two days prohibit all food, giving only 500 or 600 grams (1 pint or 20 ounces) of water, sweetened with table- or milk-sugar, daily. Then give 500 grams of milk and same amount of water. When condition becomes subacute, add carbohydrates, as preparations of flour, potatoes, etc. Add sugar to milk; when distasteful, dilute milk with Vichy, or give it alternately raw and boiled. Where milk diet not tolerated or results poor, try salt-free diet, omitting proteids and limiting milk to small amounts. Later, if no complications, lean ham, fresh pork, lamb and chicken may be given. Milk should not be taken with meals. 2. Rest in bed and avoidance of exposure. 3. Stimulate skin by general rubbings, gentle massage and tepid baths. Hot pack. 4. Dry cupping, wet cupping, or leeching over triangle of Petit. 5. Systematic disinfection of mouth,

nasal fossæ and pharynx, and treatment of skin lesions as possible portals of infection. Where excretory insufficiency appears: 6. Hot air or vapor baths. 7. Drastic purgative, followed by laxative. When signs of intoxication appear: 8. Theobromine, 0.5 gram, at most 0.75 gram ($7\frac{1}{2}$ or $11\frac{1}{2}$ grains) at a dose in child of 10 to 13 years. Powdered squill, digitalis and scammony, 0.025 gram ($\frac{1}{8}$ grain) of each in a pill, given 2 or 3 times daily. If circulation weakens, digitalin or infusion of digitalis. Convallaria or convallamarin. Sparteine in the dose of 0.04 or 0.05 gram ($\frac{3}{4}$ or $\frac{1}{2}$ grain) in the 24 hours. *Hutinel.* 357

Nephritis, Chronic Interstitial. TREATMENT. 1. Diet. Fairly full diet combined with free elimination usually gives best results. A little meat with short fiber (as mutton, chicken) may be allowed at noon, and in morning or evening some fish; vegetable food, preferably farinaceous; milk freely; stimulants prohibited. Urine and general condition of patient should be watched in relation to diet. 2. Hygiene. Freedom from anxiety and overwork; moderate exercise; warm, dry and equable climate. 3. Physical measures. Free sudation by hot-air baths, vapor baths, or hydrotherapy, carefully avoiding renal congestion. 4. Drug therapy. Sodium iodide, gr. xv-xxx; sodium phosphate, gr. xxx-xxv; sodium chloride, gr. xc; water, Oij; to be taken freely as a drink. Purgatives. Where marked anæmia: Basham's mixture or triple arsenates with nuclein. In failing compensation: digitalin combined with a vasodilator, as one of the nitrites (at first in small doses). Veratrine (0.5 milligrams or gr. $\frac{1}{32}$ every half hour until pulse relaxed) is a safe and effective vasodilator for continued use. In bad cases opium in small doses (2 to 4 minims of deodorized tincture) strengthens heart and dilates arterioles. When complications occur, stimulants, diuretics, purgatives and diaphoretics may be indicated. In dyspnoea, quebrachine hydrochlorate or aspidospermine valuable. *Butler.* 171

Neuralgia. TREATMENT. One to two grains of 1 : 1000 adrenalina ointment applied to skin over affected area in neuralgia and neuritis produces ischæmia of the hyperæmic nerves and thus arrests pain. *Sajous.* 76

Neuritis, Multiple. TREATMENT. Subcutaneous injections of arsenic caused marked improvement or cure in 5 cases. Formula used: Sodium cacodylate, 1.5 grams (23 grains); cocaine hydrochloride, 0.1 gram ($1\frac{1}{2}$ grains); liquid phenol, 3 drops; distilled water *ad* 50 grams (1½ ounces). Began with 0.4 cubic centimeter (7 minims), dose injected being increased by 0.1 cubic centimeter (1½ minims) daily until 2.0 cubic centimeters (32 minims) reached; this amount continued for two weeks, then reduced gradually to 0.4 cubic centimeter. *Willige.* 421

Noma. **ETIOLOGY.** Ulcerative stomatitis offers a good soil for development of noma. A streptothrix is regularly present in noma, showing thick mycelium at edge of lesion with fine rods and spirilla extending into adjacent tissues. This organism is probably direct cause of noma. It is present already in the pregangrenous stage.

TREATMENT. Radical treatment is to be practised in pregangrenous stage; thorough use of actual cautery over ulcer and adjoining tissue. When ulcer spreads, best results are obtained by conservative measures: applications of hydrogen peroxide, pure alcohol, and potassium chlorate. General anæsthesia contraindicated because of danger of pulmonary infection; cauterization or removal of specimens can be done painlessly. *Neuhof.*

Page 421

Obesity. **TREATMENT.** Strict vegetable diet for 4 to 6 weeks, then 150 to 200 grams of lean boiled meat 3 times a week or once daily. This diet kept up for months, and tends to protect from returning corpulence. If weight begins to increase, drop meat again for 4 to 6 weeks. Such diet best corrects obese tendencies without impairing general health. Supplement by exercises and hydrotherapeutic measures. *Albu.*

25

Osteomalacia. **TREATMENT.** In a case of non-puerperal osteomalacia, after two years in bed and failure of all other measures, suprarenal extract given according to Bossi's technique. From 8 to 10 injections of 1 cubic centimeter made each month. By the thirtieth injection great improvement was manifested, and in time the entire syndrome arrested, with almost complete restoration of function. *Bernard.*

92

Otitis Media, Chronic. **TREATMENT.** Perhydrol in 2 to 6 per cent. solution found useful. Patient drops solution into ear and remains on side for 10 minutes; auricle is then dried and cotton inserted in meatus. Where much suppuration, repeat morning and evening. Inspissated pus is dislodged, and cholesteatoma also yields. *Brcsger.*

125

In late stages:—If tube diseased: inflation, with bougieing if stenosis exists. Intratympanic injections of menthol oil, iodine solutions, pilocarpine, menthol giving best results. Where fixation of the ossicles: pneumo-massage; injection of fibrolysin sometimes valuable. Operative measures: mobilization of the malleus, synchotomy and tenotomy of the tensor tympani, eventual excision of the malleus and incus. *Yearsley.*

61

Case of subacute otitis media, complicated by suppuration of ethmoid sinus, in which hexamethylenamin (5 grains t. i. d.) caused rapid and marked improvement. *E. J. Brown.*

353

Antiseptic vapors of kelvolin, a dark, oily liquid, used in treatment of septic conditions of tympanum, attic and mastoid antrum and cells; it is forced into these cavities by means of a special volatilizing inflator inserted into

the external meatus or adapted to a Eustachian catheter. Anæsthetic property of the vapor precludes pain from heat liberated. Meatus and tympanic cavity to be carefully cleansed and dried before introducing the vapor. Treatment usually given every third day. Causes rapid diminution of discharge, improvement in hearing and in general condition. *Stuart-Low.*

362

Pelvic Inflammation. **TREATMENT.** Abscess. Simple vaginal incision with drainage; if condition becomes worse, abdominal section, by extraperitoneal method if possible, should be attempted. *Esch.*

62

Hot mud compresses over abdomen recommended in chronic exudative adnexal inflammations and pelvic exudates. The heat is much better borne than in hot-water applications, and 10° C. greater heat can be applied. If surface be covered with woolen cloths, heat retained for several hours. Causes hyperæmia and promotes removal of exudate. Contraindicated in acute cases. *Cukor.*

63

Pemphigus. **TREATMENT.** Quinine in large doses used in two severe cases with pronounced benefit. One patient was given 23 grains daily for two weeks, then 31 grains daily. No tinnitus, vertigo or vomiting resulted. *Berggrath.*

230

Pericarditis. **ETIOLOGY.** Myocardial degeneration, leading to dilatation, predisposes to pericarditis. Overaction of heart may induce pericardial inflammation. Chronic adhesive pericarditis frequent but often impossible of diagnosis, serious symptoms arising only when myocardium itself is diseased. *Brooks and Lippencott.*

26

Peritonitis. **PROGNOSIS.** Degree of improvement in circulation caused by intravenous saline infusion is an index of the extent of vasomotor paralysis, the effect persisting in proportion to recuperative power of vessels. If infusion causes no circulatory improvement little benefit can be anticipated from operation. *Lichtenberg.*

126

TREATMENT. Restrict the amount of tamponing and never insert a tampon between loops of intestine. Fowler position always exerts favorable influence. *Dege.*

64

Measures recommended for inhibition of peritonitis: 1. Gastric lavage immediately, where nausea, vomiting or gaseous distention (except where peritonitis follows perforation of stomach or duodenum). 2. Rectal instillation of normal saline by drop method, continuing for 1 to 2 hours, then interrupting for 2 hours. Where this method not practicable, give 500 to 1000 cubic centimeters of saline solution subcutaneously, repeating as required to relieve thirst and keep vessels filled. 3. Fowler position. 4. Large, hot, moist dressing of saturated boric acid solution and alcohol in equal parts applied to abdomen. 5. Give no cathartics or food by mouth; even prohibit water till patient on

way to recovery. Feed by enemata consisting of 1 ounce of concentrated liquid food in 3 ounces of normal saline; add 10 to 50 drops of deodorized tincture of opium to each feeding till no longer painful. Administer slowly every 3 or 4 hours through rubber catheter introduced not more than 3 inches. *A. J. Ochsner.* Page 360

Two cases of diffuse suppurative peritonitis treated, after operation, by means of Fowler posture and colonic irrigation by way of cæcum, with recovery. Appendix amputated, catheter introduced into cæcum through its stump and secured by purse-string suture. One to 1½ pints of saline solution run in every two hours. Free liquid fecal evacuations secured through the catheter, and should be continued till free evacuations by rectum re-established. Avoids intestinal paresis from gas retention, and promptly relieves toxæmia. Predigested foods may be administered through cæcum with certainty of their being absorbed. *Allaben.* 547

Peritonitis, Tuberculous. TREATMENT. Air injected in peritoneal cavity after paracentesis in three cases of the exudative type, with recovery. After removal of exudate by trocar, air is forced in by emptying water from a large syringe into the aspirator jar. *Florio.* 238

Phenolphthalein. Acts in about 6 hours and has no constipating after-effect. Sometimes loses its effect on continued use, and may cause diarrhœa. Dose: 3 to 5 grains *t.i.d.*, in powder, pill or capsule. Five grains are probably the largest safe dose. In a child, begin with ½ grain. *Gilbride.* 172

Placenta, Premature Detachment of Normally Situated. TREATMENT. Rupture of membranes and rapid delivery not to be done till uterus contracting, patient rallied, and os somewhat dilated. Where no contractions, no dilatation, and patient in collapse, use tampon and binder until patient and uterus have recovered. This enables uterus to withstand pressure of blood within it and so controls hæmorrhage. *Goldstine.* 300

Pleural and other Effusions. TREATMENT. To prevent recurrence, after aspiration, of serous effusions into the pleura, peritoneum, tunica vaginalis, etc., 8 minims to 2 drams (according to size of cavity) of suprarenalin or adrenalin in four times the quantity of saline solution may be injected into the cavity. *Sajous.* 76

Strong galvanic currents employed in serous effusions, using as positive electrode a cotton wad soaked in 10 per cent. sodium bicarbonate solution and as negative electrode one soaked in 5 per cent. tartaric acid. Daily applications of one hour, with current of 15 or 20 milliampères, gradually and cautiously increased up to 50 or 60. Fluid promptly reabsorbed in many cases of peritoneal, pleuritic and even pericardial effusion. *De Renzi.* 234

Pneumonia. TREATMENT. Venesection recommended in cases with signs of progressive dilatation of right heart, even where patient far from robust. Always gives some relief and is often followed by recovery if done before right heart too greatly distended. If full stream of blood can be obtained, 6 to 10 ounces will suffice, and bleeding may be repeated in thirty-six to forty-eight hours if necessary. If stream small, little good results, because tension lowered too slowly. *McPhedran.* 332

Poliomyelitis, Epidemic. PROPHYLAXIS. Nasal and buccal secretions should be disinfected. *Flewner and Lewis.* 231

Puerperal Infection. LOCAL TREATMENT. In ulcerative endometritis, vaginal douching and drainage of uterine cavity. Where retained material with normal temperature, or where serious hæmorrhage, prompt evacuation of uterine cavity. Where moderate fever and general condition good, delay interference a few days to a week, awaiting spontaneous evacuation. Where high fever or severe toxic symptoms, especially if virulent streptococci in vaginal discharges, curet. If symptoms of extra-uterine infection, strictly avoid curettage (unless serious hæmorrhage). Curettage, where indicated, best done with finger. *Winter.* 300

Pyelitis in Infants. DIAGNOSIS. Of 9 cases in children ranging in age from 9 months to 2½ years, 6 had high fever; 5, frequent micturition; 3, chills; 1, pain, and 1, tenderness in lumbar region. None vomited. Diagnosis depends on urinary findings: pus, epithelial cells, occasionally blood-corpuscles, and no casts.

TREATMENT. Urotropin, ½ to ¾ grain every two hours, very effective. *Gray.* 174

Pyloric Spasm of Infants. TREATMENT. High rectal instillations of Ringer's fluid (sodium chloride, 7.5 grams; potassium chloride, 0.42 gram; calcium chloride, 0.24 gram; boiled water, 1 liter) gave good results. Half a liter of solution is introduced in 2 hours, and the procedure repeated morning and evening. Vomiting ceases after a few days' treatment. *Rosenstern.* 232

Pyloric Stenosis, Congenital. TREATMENT. Fat-free feedings advocated, vomiting and hyperperistalsis having thereby been caused to subside in 2 cases. First give a tapioca preparation, alternating with a suspension of flour in water; then give latter alone. Flour employed to contain not over 5 per cent. fat. Add occasional nutrient enemata of albumose and sugar to keep up infant's weight. After several days return to normal amount of food—more or less gradually, according to severity of case. *Nolf.* 424

Radium. Permanent radium emanations can be established in certain organs, the blood, or the whole body, at will, by injecting finely divided radium sulphate suspended in saline solution isotonic with blood. Thera-

peutic results obtained: 1. Relief of pain in malignant growths, deep infections, tuberculous meningitis, etc. 2. Diminished inflammatory oedema around malignant growths, tuberculous lesions, infected glands, etc. 3. Occasionally general improvement in tuberculous patients. 4. Retrogression of benign growths, as keloids. *Dominici*. Page 361

Rheumatic Heart Disease. DIAGNOSIS. In children. 1. Subcutaneous nodules generally indicate active cardiac disease. 2. Evening fever without previous cause suggests fresh cardiac inflammation. 3. Joint pains. 4. Sudden appearance or increase in anæmia. 5. Persistently frequent pulse. *Carr*. 26

Rheumatism. DIAGNOSIS. Enlargement of thyroid gland claimed to be a diagnostic sign of rheumatism in children. Whenever it is present in childhood, presence of rheumatism should be inquired into. *Clemens*. 482

Scurvy, Infantile. TREATMENT. 1. Orange-juice, 1 tablespoonful or more every two hours; grape-juice and lemon-juice less valuable. 2. Feed child on uncooked or freshly boiled milk. 3. Plenty of water to drink. 4. Rest; avoid handling the child. 5. Fresh air. 6. Mashed potatoes or potato soup (Comby, Still); fresh brewers' yeast (Baginsky); sodium lactate (Wright). 7. Iron, arsenic and cod-liver oil late in disease where marked anæmia or exhaustion. *Ostheimer*. 545

Septicæmia. TREATMENT. In the presence of persistently low blood-pressure, hypothermia, and cyanosis, adrenalin is valuable when very slowly administered intravenously in the proportion of 5 minims of the 1 : 1000 solution to a pint of warm saline solution (105° F.). It enhances pulmonary and tissue respiration and the activity of the immunizing process. *Sajous*. 75

Collargol found valuable in septicæmia and pyæmia of medium gravity, as well as in obstinate febrile states due to reabsorption of toxins and associated with anæmia. Should be given in all cases of puerperal infection. It is best administered by slow intravenous injection of 1 to 2 c.c. of a 5 or 10 per cent. suspension. Probably acts as a catalytic, accelerating oxidation. *Albrecht*. 234

Shock. TREATMENT. Suprarenalin or adrenalin, very slowly administered intravenously; 5 minims of the 1 : 1000 solution to the pint of warm saline solution (105° F.). In urgent cases, 10 drops may be given in 1 dram of saline solution. Artificial respiration hastens effects. *Sajous*. 75

Shock, Postoperative. PROPHYLAXIS. Pituitary extract (1 cubic centimeter of 20-per-cent. solution of posterior lobe) was injected in three cases before complete recovery from the anæsthetic, in conjunction with normal saline by rectum. The pulse, previously barely perceptible, almost at once became

large and bounding, slow, and regular, effect lasting 12 to 16 hours. *Wray*. 93

TREATMENT. In shock after abdominal operations, remove two skin-sutures near navel and insert glass tube joined by rubber tubing to receptacle containing saline solution at 112° F. Pass the tube upward beneath omentum and transverse mesocolon to region of solar plexus, and run in one pint of hot saline, causing rise of blood-pressure by heat and pressure stimulation of sympathetic system. Remove tube, cover wound with gauze, and apply binder to sustain pressure. Inject 10 ounces of hot saline in rectum every 2 hours. *Hopkins*. 159

Sinus Disease. TREATMENT. Case of chronic suppuration of antrum in which the discharge and subjective symptoms were greatly relieved by 5-grain doses of hexamethylenamin three times daily. *E. J. Brown*. 353

Skin Growths and Ulcerations. TREATMENT. Powdered potassium permanganate used as a caustic for benign and malignant neoplasms, lupus, keloids, chancreoids, cavernous angiomas, etc. Surrounding healthy skin is protected by rings of adhesive plaster piled one over the other, with central opening slightly larger than area to be cauterized. Powdered permanganate is then poured in and covered over with adhesive. After 48 hours, a softened mass alone remains of the growth. Upon removing this a sharply-defined depression is revealed, which heals rapidly. The procedure is usually painless. *Finck*. 232

Suprarenin. Poisonous dose varies with the individual. Danger arises from: 1. Concentration of solution used. Large amount of a weak solution is without danger. 2. Method of introduction. Intravenous injection gives immediate bad effect; locally or subcutaneously it is well borne. Author employs solution of 0.64 gram suprarenin borate in 100 cubic centimeters of 0.5 per cent. novocaine, made up fresh from tablets for each operation; 125 cubic centimeters of such solution used without danger. *Braun*. 127

Syphilis. TREATMENT. Mercurool found useful to alternate with the protiodide and in cases where the ordinary preparations of mercury cannot be assimilated; gr. j three or four times daily. Author advocates course of twenty inunctions of the official ung. hydrarg. at the outset of every case of syphilis, before beginning internal administration. Where latter causes serious gastro-intestinal disturbance, and the symptoms of the disease are marked, inunction treatment is to be adopted. Course of three weeks of inunctions in the spring and fall for four or five years recommended. In cases of ulcerating tubercular syphiloderma and gummata best results obtained using potassium iodide (gr. x-xx t.i.d.) along with mercurial inunctions twice daily. Mercury is as valuable in tertiary as in secondary syphilis. *Christian*. 45

Tabes. TREATMENT. Strychnine in gradually increasing doses arrested progress of the condition in almost all cases. Begin with $\frac{1}{80}$ grain *t.i.d.*, increase to $\frac{1}{20}$ at end of first week, to $\frac{1}{16}$ at end of second, then add one drop of a solution of 1 grain of strychnine in 1 ounce of water. Increase by a drop every day till total dose is $\frac{1}{8}$ grain *t.i.d.*, which is maintained for 3 months. Then increase as before until $\frac{3}{16}$ is reached, maintain for 3 months, etc. Maximum dose of $\frac{1}{2}$ grain being reached, it is maintained for a year, then gradually reduced. Results obtained: pains disappeared, bladder and bowel control regained, locomotion much improved; general amelioration. *Hammond.* Page 236

Tetanus. PROPHYLAXIS. While 1500 units of antitoxin will prevent tetanus in wounds without severe mixed infection, it may fail when used only once when there is mixed infection lasting over 10 days. In such cases antitoxin should be repeated every week while infection lasts. *Rowan.* 364

Tetany. TREATMENT. Infundibular extract (20 per cent.) of Burroughs, Wellcome & Co., recommended; given by intramuscular injection in doses of 7 drops *t.i.d.*, or oftener. If used subcutaneously it might cause necrosis of skin by vasoconstriction. Not poisonous. *Ott and Scott.* 99

Tetany, Gastric. TREATMENT. Soluble calcium salts rapidly control symptoms in the tetany of gastrectasis; continued use required. Large saline infusions, as well as parathyroid preparations (nucleoproteid) by the mouth, are but slightly effective. *Kinnicutt.* 123

Tic. DIAGNOSIS. True tic, which is of psychic origin, and is a sequel to the unhindered repetition of a once voluntary purposive act, is distinguished from spasm, which is due to irritation of any reflex arc of the bulbospinal tract, as follows: 1. Movement slower. 2. Occurs in volleys. 3. No muscular weakness. 4. Reflexes normal. 5. Painless. 6. Disappears in sleep. 7. Pseudo-coördinate and intentional. 8. Influenced by volition or emotion, and followed by satisfaction. Upon this distinction depends whether treatment shall be surgical, medical or psychotherapeutic. *T. A. Williams.* 5

Toxæmia of Pregnancy. TREATMENT. Failure of thyroid gland to hypertrophy during pregnancy probably related to toxæmia. Administration of thyroid beneficial by supplying this deficiency and by diuretic action. Saline extract of fresh human thyroid proteids more rapid and reliable in action than ordinary sheep thyroids. Hypodermic use of thyroid proteids greatly superior to oral use. *Ward, Jr.* 27

Traumatic Neurosis. DIAGNOSIS. In response to galvanism the anodic closure contraction equals or surpasses the cathodic closure contraction, as in the reaction of degeneration, but in tracings of muscular contractions the peaks are not rounded as in the reaction of degeneration, but sharp and angu-

lar as with normal contractions. Increased excitability is observed on both affected and sound sides. *Larat.* 124

Tuberculosis of Bladder. TREATMENT. 1. General hygiene. 2. Internally, 5 grains of guaiacol carbonate *t. i. d.* 3. Locally, instill into bladder every other day 20 drops of 20 per cent. iodoform emulsion in liquid alboline, with deep urethral syringe. *Christian.* 417

Tuberculosis of Larynx. TREATMENT. Case with marked infiltration of epiglottis and aryepiglottic folds, and ulceration of one vocal cord, in which three applications of galvanocautery led to recovery. Powder of anæsthesin and orthoform, equal parts, inhaled into larynx for pain. *D. Grant.* 426

Tuberculosis, Pulmonary. DIAGNOSIS. X-ray method contributes to early diagnosis. Where symptoms point to pulmonary lesion but no physical signs are demonstrable, radiography may show peribronchial infiltration or enlarged bronchial glands. Later, consolidated areas and cavities can be accurately located at any depth within the lung. *Leonard.* 177

TREATMENT. Mercury succinimide administered hypodermically in 8 cases caused general improvement and appeared to exert a marked controlling influence over the tuberculous process. *Freeman.* 90

Beechwood creosote given both internally and by inhalation affords much relief to symptoms in nearly all cases and in all stages. It is also valuable as a preventive in those predisposed or exposed to the infection. Rest, fresh air, proper food, with or without lime salts. *Beverley Robinson.* 23

Menthol ointment (30 or 40 per cent.) used with benefit. It is rubbed in daily for 10 minutes, skin of back, chest and thighs being successively employed. Improvement manifest alike in symptoms and physical signs. Probably acts directly on involved tissues. Treatment should be persisted in for 4 months or more. Also valuable in old fibroid pneumonias. *Stepp.* 238

Early tuberculosis treated by antiseptic inhalations with remarkable results. Solution used: Phenol, creosote, spirits of chloroform, of each 8 cubic centimeters (f3j); tincture of iodine, spirits of ether, of each 4 cubic centimeters (f3j). Of this 6 to 8 drops are poured on the felt or sponge of Yeo's perforated zinc inhaler, and inhaled regularly every hour in the daytime, as well as 2 or 3 times during the night, when patient is awake. Cough is thereby relieved without sedatives and expectoration facilitated. Where hæmoptysis, add turpentine to the solution. In all cases patient should rest in bed for a week, with windows of bed-room open. In second week he may rise for an hour or two daily, and later walk in the open air every morning. When temperature is normal, use of inhaler may be gradually left off. *Lees.* 93

Two cases distinctly improved in all respects by treatment with thymus gland; 30 to 120 grains three or four times daily. Author uses fresh thymus of calves, dried by himself. *Gwyer*. Page 424

Tuberculosis, Superficial. TREATMENT. Mercury succinimide (gr. $\frac{1}{8}$ subcutaneously every other day) with mercury protiodide (gr. $\frac{1}{4}$ by mouth *t.i.d.*) gave good results in two obstinate cases of scrofuloderma and one of pharyngeal infiltration. Curetting, cauterization and X-rays ineffective until mercury added. *Hertzberg*. 25

Typhoid Fever. INTESTINAL PERFORATION. Mortality after operation for perforation in children is below 50 per cent.—25 per cent. lower than in adults. *Jopson and Gittings*. 25

TREATMENT. Alcohol compresses to the abdomen in children advocated in preference to the cold tub-bath treatment, which author regards as favoring hæmorrhage or perforation and as liable to work injury to the heart. Compresses used in 12 severe cases which were rendered milder. Pad of absorbent cotton or eight thicknesses of gauze wrung out in 85 per cent. alcohol (90 per cent. for adults), applied to abdomen, covered with cold-water gauze compress, and held in place by flannel band. Water compress renewed every hour, alcohol compress every 2 hours. Acts by local active hyperæmia, while alcohol absorbed stimulates heart. Used also in peritonitis and appendicitis with benefit. *Cheinissee*. 122

Ulcer of Leg, Syphilitic. TREATMENT. Reduce alcohol consumed. Mercury and iodides, preferably organic iodides, well diluted, alternated with courses of strychnine particularly when ulcer again becomes sluggish. General antiseptic application: Boroglyceride 3j, hot water Oss. Locally, black or yellow wash; solution of phenol (1 to 100); tincture of iodine (1 to 4 or 5 of hot water); ammoniated mercury or yellow oxide ointments. Dry treatment: Zinc oxide 3iij, calomel, 3ss, infusorial earth q. s. ad. 3j. X-rays have benefited some cases. Where ulcer resists cure due to tethering of its edge to underlying bone, apply antiseptic fomentations, scrape ulcerated surface with Volkmann's sharp spoon, undercut edges with scalpel, and draw them together, freshening skin-margins. *W. Evans*. 23

Uncinariasis. DIAGNOSIS. In mild cases eosinophilia is often not available for diagnosis. Following method recommended: Dilute fecal material ten times with water and centrifugate at high speed for 6 or 8 seconds. Pour off supernatant fluid, shake sediment with water, and centrifugate again just long enough to throw eggs to bottom (usually 2 seconds). Repeat once or twice, remove sediment with pipette and examine for eggs. Calcium chloride solution assists in removal of debris. Large amounts of feces may have to be examined before eggs discovered. *Bass*. 168

Varicocele. PROGNOSIS. Investigation of results of operation in 39 cases. Data obtained one to ten years after operation. Thirty-six per cent. still had pain in testicle or groin, 31 per cent. tenderness in testicle, 27 per cent. sexual hypochondriasis. No atrophy of testis due to operation. Recurrence in 6 per cent. Operation acknowledged distinctly beneficial in 80 per cent. *Barney*. 427

Vomiting in Infants. TREATMENT. Condition often a mere habit, vomiting reflex being established owing to former injudicious feeding. Administer chloral, bromide or chlorotone until habit is broken; or better, exhaust the vomiting center by giving harmless emetic, as wine of ipecac and carbonate of ammonium, half an hour before feeding. Latter method used in 55 cases; immediate cure in 30, and improvement in 10. *Pritchard*. 239

Vomiting of Pregnancy. TREATMENT. Adrenalin used with success in a case previously uncontrollable. Ten drops of 1 to 1,000 adrenalin solution given morning and night, at first in enema of 150 grams (5 ounces) water with 20 drops of laudanum, after 3 days in ice-water by the mouth. Nutrient enemata also given. Vomiting ceased on second day, and on third patient could retain a little food. Recurrence of nausea toward end of pregnancy relieved by 10 drops daily for 5 days. *Rebaudi*. 94

Vomiting, Postoperative. TREATMENT. Where nausea, vomiting or gaseous distention after abdominal section, employ gastric lavage, which often checks incipient peritonitis. Spray pharynx with 2 per cent. cocaine solution 10 minutes before tube introduced. *A. J. Ochsner*. 360

Wassermann Reaction. Positive reaction often noted in cases of leprosy giving no history or symptoms of syphilis, chiefly in the tubercular and mixed forms of the disease (31 out of 38). In cases of the maculo-anæsthetic and purely trophic type it is usually negative (3 positive out of 22). *H. Fox*. 355

Reaction of fixation studied in 76 children, including 72 cases of hereditary syphilis. Where disease appears early 87.5 per cent. of cases give positive reaction. Reaction may be rendered negative by mercurial treatment. Where active stage of disease past, response depends on time elapsed since last symptoms. In hereditary syphilis appearing late, only 20 per cent. of cases gave positive test; hence, negative reaction does not eliminate syphilis, especially after a certain age. Reaction uniformly negative in non-syphilitic children. Scarlet fever not a source of error. *Demanche and Détré*. 542

Whooping-Cough. TREATMENT. Oxygen used in 30 cases. It is given at each paroxysm. Cyanosis subsides and suffocation is prevented. Child keeps in good condition with appetite throughout. It is best inhaled

through a funnel; 10 to 12 liters necessary to control a paroxysm. Where broncho-pneumonia threatens, oxygen should be inhaled every hour; it renders lung aseptic. *Weil.*

Page 64

Quinine salve applied to nasal mucous membrane with benefit. Used 1 to 2½ grams of

quinine in 10 to 15 grams of lard (30 grains to 2 drams in 1 ounce), and introduced piece of salve size of pea into each nostril 3 to 4 times daily with glass rod, head being thrown back. Symptoms much improved after 3 or 4 days. Especially effective in very young children. *Berliner.* 301

Book Reviews

THE PREVENTION AND TREATMENT OF ABORTION. By Frederick J. Taussig, A.B., M.D., Lecturer in Gynecology, Medical Department, Washington University; Obstetrician to the St. Louis Maternity Hospital; Gynecologist to the St. Louis Skin and Cancer Hospital, etc. Large Octavo of 180 Pages, with 59 Illustrations. St. Louis: C. V. Mosby Medical Book and Publishing Co., 1910. Cloth, \$2.00.

Such a work as Dr. Taussig's fills a real want, no important monograph in the English language on abortion having been published in recent years. It is divided into twenty-six chapters, all of which are written in the clear, comprehensive language which best serves the purposes of the general practitioner. The treatment of abortion as given is characterized by judicious conservatism, and stress is appropriately laid on the danger of instrumental perforation. The author holds that the mortality of abortion exceeds that following parturition, and that complications involving operative procedures are more frequent after a mismanaged abortion than after delivery. Hence the wisdom of devoting considerable space to the prevention of abortion. On the whole, this work, which is well illustrated and printed, can be highly recommended.—L. T. DE M. S.

GOUT. By H. Strauss, Professor of the Third Clinic, Royal Charity Hospital, Berlin. Authorized American Edition. Translated under the direction of Nellis Barnes Foster, M.D. Pp. 70. New York: E. B. Treat & Company, 1909. Cloth, \$1.00.

The purpose of the author of this small volume was to present to the general practitioner, in a succinct and readable form, the recent conceptions of the pathogenesis and treatment of this affection. He has succeeded admirably in his task, and produced a book of considerable practical value.

According to the views expressed, gout is due to a retention of uric acid in the organism, owing to faulty metabolism or defective renal function, and to its precipitation in the tissues as sodium biurate, both because of its presence in excessive amount and the association of some as yet unidentified product or products of metabolism. The urate is deposited chiefly in the cartilages and tendon sheaths because of the relatively poor blood-supply to these structures. In the treatment of gout the author recommends a diet that includes milk and eggs, most vegetables, and a moderate amount of meat. Water is to be taken freely. The practitioner will find much that is valuable in this little work; the student can obtain from it clear notions concerning the present state of our knowledge of the gouty state.—L. T. DE M. S.

THE PRINCIPLES OF HYGIENE. A Practical Manual for Students, Physicians, and Health Officers. By D. H. Bergey, A.M., M.D., Assistant Professor of Bacteriology, University of Pennsylvania. Illustrated. Third Edition, Revised and Enlarged. Octavo of 555 Pages. Philadelphia and London: W. B. Saunders Company, 1909. Cloth, \$3.00, net.

Although this book is a third edition, it may almost be considered as new, so numerous are the changes introduced. Indeed, hygiene is making such strides that four years are sufficient to transform many of its fundamental features. We note in the present volume a considerable extension of the subjects of sewage purification, the mode of transmission of various diseases—plague, malaria, yellow fever, etc.—the defensive functions of the body and the means to enhance them, bacterial therapy and prophylaxis, etc. The wide scope covered by the work gives it great value not only for the practising physician and the hygienist and sanitary officer, but also for sanitary engineers and architects. To all these we can heartily recommend Dr. Bergey's book.—L. T. DE M. S.

PRIMER OF SANITATION. Being a simple work on disease germs and how to fight them. By John W. Ritchie, Professor of Biology, College of William and Mary, Virginia. Illustrated by Karl Hassmann. Pp. vi + 200. Yonkers-on-Hudson, N. Y.: World Book Company, 1909. Cloth, 50 cents; by Mail, 60 cents.

This is an elementary text-book in which are described the relation of the human organism to germ life, the best known forms of pathogenic bacteria, the diseases which they cause, and the various methods available for preventing the spread of infection. The harmful effects of unsanitary modes of living are emphasized, and a general review given of the procedures and regulations necessary for the promotion of public health. Protozoan and other parasites are also mentioned, and due stress laid on insects as an agency in the spread of disease.

The text and illustrations are admirably adapted to serve the purpose for which the book was written: to inculcate in the minds of our youth the importance of preventive sanitary measures. The adoption in all schools of a text-book such as this one for required study would be productive of incalculable benefit, and mark a distinct advance toward a strictly rational system of scholastic education.—L. T. DE M. S.

POCKET THERAPEUTICS AND DOSE-BOOK. By Morse Stewart, Jr., B.A., M.D. Fourth Edition, Rewritten. Small 32mo of 263 Pages. Philadelphia and London: W. B. Saunders Company, 1910. Cloth, \$1.00, net.

The fourth edition of this small volume has been improved by the omission of various drugs no longer in general use and their replacement by the remedies recently discovered and now on trial. The introductory section of the work contains general hints as to prescription writing, a list of Latin abbreviations and genitive endings, tables of the apothecaries' and metric systems of weights and measures, together with a list of the more commonly used remedies classified according to their action. The succeeding 150 pages are devoted to a very complete table of the official and non-official drugs, with their various preparations, doses in both systems of notation, and a brief summary of their actions and uses. The latter, we believe, might have been somewhat amplified with advantage. The remainder of the manual contains formulas and doses for hypodermic medication, inhalation, nasal douching, etc., complete tables of solubilities and incompatibilities, an index of diseases, with the remedies appropriate in their treatment, as well as a list of poisons, with the symptoms, antidotes and general treatment. The work will be found very useful for quick reference, furnishing, as it does, a great deal of precise information within a small compass.—L. T. DE M. S.

NEW AND NONOFFICIAL REMEDIES, 1910. Containing descriptions of articles which have been accepted by the Council on Pharmacy and Chemistry of the American Medical Association, prior to January 1, 1910. Pp. 256. Paper, 25 cents; Cloth, 50 cents.

The new edition of this little work contains, in addition to the remedies considered in the previous issue, descriptions of the articles approved by the Council of the American Medical Association during the year 1909. A number of unofficial non-proprietary remedies are also described. The action, dosage, uses and tests of identity, purity and strength of each article are given. The therapeutic value of many of the new remedies not yet having been definitely ascertained, the compilers had, in some cases, to rely on statements of the manufacturers as to the qualifications of their products. In certain instances, however, a note of caution has been introduced concerning the claims made, as, *e.g.*, in reference to the non-toxicity of creosote carbonate, of beta-naphthol benzoate as an intestinal antiseptic, etc. The description of medicinal foods is calculated to put physicians on their guard as to the often relatively slight value of such products.

TREASURES OF TRUTH. By George F. Butler, M.D. Author of "Love and Its Affinities," "The Isle of Content," "Sonnets of the Heart," etc. S. DeWitt Clough, Ravenswood, Chicago, 1910. Price, 75 cents; leather bound, \$1.00.

This little volume contains much philosophy of the optimistic kind. While such a work is not generally classed among those which are "indispensable to the busy practitioner," it nevertheless belongs to a worthy category, that which serves to brighten his leisure moments. A perusal of the book cannot but prove most entertaining.—L. T. DE M. S.

[End of Editorial Department]

The General Field

A Common Kind of Professional Neglect.

While it is the physician's province to make his patients well, it is also his duty to keep them well if possible. This proposition on its face might seem to indicate some excess of altruism and self-sacrifice on the doctor's part, but in reality it works the other way.

The intelligent family that employs one individual family physician, and depends upon him in time of stress, soon acquires a great deal of confidence in his ability. This very confidence is essential to his success in caring for that family.

During the period of adolescence a great deal depends upon the proper nutrition and the right regulation of personal habits. The average boy or girl at that age needs watchful care in order that they may develop the highest type of physical efficiency.

A little time spent in explanation to the parents may not only prove of great incidental benefit to the family, but establish in that family a habit of consulting the family physician with a view of keeping the physical condition of the family up to a high standard.

There is a great deal that the doctor can do for people who are not actually ill. Certainly nothing could be more gratifying to a modern physician, thoroughly in touch with all recent developments in hygienic dietetics and physical training, than to see the child population of the various families under his care developing into splendid physical types.

This is a progressive age. That which was abreast of the average standard of living ten years ago, is now far in the

rear. The primeval force of vitality in the average child will carry it through the adolescent period under any ordinary conditions, but very often full adult age is reached with a poor equipment for the strenuous outlook to be faced.

Climatic Sophistries.

It is said that there are two sides to every argument, but there are some questions in which the only chief opposing arguments are sophistries. This has been demonstrated very clearly in the perennial struggle between the people for whose interests it is to have a system of forestry established, and the few for whose interests it is to have the last stick of marketable timber turned into cash. When a writer publishes an indignant protest in a magazine, he is called a "muck-raker." When a so-called statesman sneers at these protests, he claims to be protecting the business interests of the country.

There has been considerable done in this matter of protection of the business interests by the present administration. As an instance of this fidelity to the business interests is the published statement of the head of the Weather Bureau some months ago to the effect that spring snows melt more rapidly in the woodland than they do in the open fields. This, of course, was designed to counteract the general impression that the removal of the forests tended to produce spring freshets and subsequent drying up of the soil. Any person of any observation whatever who ever lived in the country knows beyond all doubt that this statement is incorrect.

The Hon. Joseph G. Cannon, who also opposes anything that will hurt business, some months ago delivered a speech in Boston in which he referred to the conservationists in very contemptuous terms, quoting the records of Colonial times in which there were periods of severe droughts. His remarks were said to have been extremely witty and satirical, yet there are few people who could be really brought to believe that the Hon. Joseph G. Cannon was sincere in his arguments.

The history of the development of all new countries shows that there is a preliminary period of a common hardship, after which a few people undertake to exploit all the rest. This country is clearly emerging from that raw state of exploitation, and the voters are apparently beginning to appreciate the situation. It is a slow time for the stock brokers, but a more promising period for the average wage earner or business man than at any time heretofore.

New Standards in Medical Practice.

A great deal is being written and said at the present time as to higher standards for medical education, and while there may be some insincerity in rare instances, as a rule this sentiment is genuine. The day of the crude illiterate, ill balanced, strictly commercial doctor is rapidly going, if not already passed away.

But there is another dynamic force at work among the medical profession—appreciation of the privilege of service. As the commercial standards have advanced and the rewards in business life have increased, the doctor realizes more and more that his profession is not a money-making one. At best, his rewards are insignificant in comparison with

those of other callings. Instead of being disheartened and cast down by this knowledge he is prone to regard his profession as a glorious and humane vocation. On every hand lie opportunities for rendering a service to humanity which can in no manner be measured in dollars and cents, and any incidental disappointments which may come to him because of his failure to reap a large financial reward are brushed aside as comparatively trivial in view of the knowledge which he carries with him of having gloriously performed a noble work.

There is no possible way by which the highest type of physician can be repaid for his labors in money. The sacrifices which he makes as a matter of daily routine are beyond financial valuation. While there may be a sense of satisfaction in having provided for the future comfort of his family, the real physician never attaches any special value to the accumulation of money for itself.

Perhaps the most disheartening thing which confronts the doctor is the pitiful ignorance of a class of people who flout the dearly bought scientific knowledge of the doctor and turn to the fakirs, religious and otherwise, who prey like parasites upon a long suffering society; but this is an age of enlightenment, and it may be that the present dignified, uncomplaining, altruistic attitude of those who constitute that glorious body known as the medical profession, may eventually carry conviction even to the fetish worshippers.

"Malicious Animal Magnetism."

Hampton's Magazine for October contains a very interesting article by Professor Jastrow, of Wisconsin University, under the title, "Malicious Animal Magnetism." In this paper he deals with

the frequently expressed belief of Mrs. Mary Baker G. Eddy, that there may be two kinds of "absent treatment," one, evidently, the kind which miraculously fills a hollow tooth, and the other of the type known in the black belt as "hoo-doo."

There are numerous people—chiefly women of middle age—who allow their minds to rest on the refulgent possibilities of Christian Science. There is an æsthetic element which enters into this curious interest in the cult of science healing, prevailing to a considerable extent among those who do not, however, class themselves as real "scientists."

The possibilities, as explained by Professor Jastrow, of what belief in "malicious animal magnetism" or Christian Science malpractice may lead to, would, if fully understood, carry a great deal of dismay to these quasi believers; as if the real dyed-in-the-wool Christian scientists believe, as apparently they do believe, in this delusion, it opens up a very direct retrogression toward the dark ages.

An Objectionable Form of Standardization.

No English word of five syllables has been worked any harder in the past few years than "standardization." Everything must be made of a uniform standard. The railroads are now standard gauge, machinery has been standardized, ready-made clothing is made according to standard measurements and politicians require standardization of their adherents at the polls.

This same sentiment enters into the social life, and especially with school children. The public schools are graded in such a way as to reduce the educational process to factory regulations. Girls march in rhythmic precision

dressed in bloomers of uniform cut and material. Boys wear the same kind of clothes and the same kind of caps, say exactly the same thing and think the same things.

There is no doubt that this is a business-like country, but it is unfortunate that all individuality in our educational system should be frowned upon. Those who have made their mark in the world's history have usually been individual types. The more that individuality in the child can be developed, the greater is the prospect of the child amounting to something.

The doctor is coming in closer touch with the educational system as the commendable idea of medical inspection is being carried out. This is certainly a desirable thing. No one recognizes more fully than the family physician the desirability of developing the individual characteristics of the child along safe lines. The high school systems of large cities are being very severely criticised by people who are competent to pass an intelligent opinion. It is an absolutely undesirable thing to impart education on the conventional plan. Some time the system of concentration will be abandoned, and educators will wake up to the fact that instructions should be fitted on to the child rather than have the child entirely remodeled to fit the system of education.

Sunshine Guaranteed.

An enterprising editor of a newspaper at St. Petersburg, Fla., is evidently not lacking in public spirit. Furthermore, he has confidence in his climate. He has announced in the columns of his paper that any visitor to St. Petersburg may subscribe to his publication on the basis of "sunshine guaranteed." Any day when the sun does not shine by a cer-

tain hour, the paper shall be furnished without charge.

Those who have already visited St. Petersburg will no doubt consider this a much less rash proposition when applied to this locality than in the case of the average section of the United States. They will smile at the bare suggestion of this offer involving any risk. The fact is, days when the sun does not shine in St. Petersburg are said to be so infrequent that the visitor who subscribes on this plan will soon learn not to expect any rebates.

Let us suppose that the announcement of this very up-to-date newspaper man was to be generally made public in the city of London. We can well imagine that the British traveler, who penetrates even the interior of "Darkest Africa" in his search for sunshine, will change his course and follow in the footsteps of Ponce de Leon with a somewhat similar purpose in view. He would find, however, that the Pittsburger, equally disposed to take long journeys in search of sunshine, had forestalled him.

The Dangerous Fur Coat.

Shrewd shopkeepers have, in the last few years, been making a great deal of money with the fur coat or fur-lined overcoat. They have succeeded in creating the impression that it is fashionable for a woman to travel about shopping, and in other ways, incidentally sweltering in a fur coat.

According to Mr. Daniel DeFoe, Robinson Crusoe found it more comfortable to wear a fur coat on his island in the tropics than to habit himself in cloth. This seems to be about the only reliable scientific data on which to base the usefulness of the fur coat, except as protection when driving in cold weather.

A great number of cases of pneumonia

and chronic bronchitis, no doubt, can be traced to the "fur-coat habit," based upon fashion and not utility. The business man wears a fur-lined overcoat one day and a cloth coat the next, and wonders why he takes "cold!"

Lowest Death Rate on Record.

The death rate in the death registration cities and States of the United States dropped to 15 per thousand of provisionally estimated population last year, according to the forthcoming United States Census Bureau's bulletin on mortality statistics for 1909, which has been submitted to Director Durand by Dr. Cressy L. Wilbur, chief statistician for vital statistics.

In 1908 the death rate in the Census Bureau's registration area was 15.4 per thousand, and in the bureau's annual report for that year, issued last spring, it was stated that it is evident an era of low mortality has begun.

The death rate of 1909 is, the bulletin states, lower than that for any previous year of registration, and probably is the lowest that ever occurred in the history of the United States.

It is stated that the mortality was distributed with more than ordinary uniformity throughout the year 1909, and no epidemics of other than a very local extent were found to have occurred.

It is a fact of much interest, the bulletin states, as showing the general prevalence in 1909 of extremely favorable conditions for human life, that the death rate of England and Wales for that year was 14.5 per thousand, which was also the lowest on record for that country, while the rate of 14 for the city of London was even lower, and demonstrates the fallacy of the belief that high death rates are necessarily found in large cities.

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Original Articles

SURGERY OF THE OBESE.*

By ROBERT T. MORRIS, M.D.,

Professor of Surgery in the New York Post-Graduate Medical School and Hospital,
NEW YORK.

IN dealing with very fleshy patients we have to take into account certain conditions in physiology peculiar to the individuals of this class, and it is necessary to give consideration to a few very important mechanical points. In making incisions through the adipose tissue it is essential to make very clean cuts, in order to cause as few fatty tabs and irregularities as possible, because such tissue is poorly supplied with blood. In hæmostasis it is well to avoid the use of artery forceps if we can, because artery forceps crush a certain amount of tissue which must be disposed of by the lymphatics, and the lymphatics of the adipose tissue are neither abundant nor active, as compared with those of some other structures. If, instead of using artery forceps, we slip a ligature under each vessel by means of a needle, it lessens the amount of ragged tissue. When we have to tie a ligature through a mass of fat, the amount of fat included must be as small as will suffice, and the ligature must be drawn with an unusual degree of snugness, because the oil within the grasp of the ligature responds to the ordinary principle in hydrostatics, and slowly moves out of the way of the pressure. This may leave the ligature loose in an hour after it has been tied snugly enough to control hæmorrhage at the time of operation. Where we have to ligate a series of vessels lying near together, as in the fatty mesentery, in bowel work upon an obese patient, it is often best to run a continuous suture along the face of the cut mesentery with its opened vessels, and at each turn about the vessel take a half hitch with the suture. This step in technique saves considerable time, avoids much injury to fatty tissues, and disposes of the danger of loosening of the parts within the grasp of the suture material in an hour subsequent to operation.

* Read by title at the Eleventh Annual Meeting of the American Therapeutic Society, held in Washington, D. C., May 5, 6 and 7, 1910.

During the entire time when we are at work with an obese patient, free oil is escaping, and the natural tendency would be to wipe this out along with blood and serum; but the adipose tissue must not be brushed, for gauze or sponge injures its texture and liberates still more oil. We have to depend upon the principle of filling the wound with salt solution and allowing the free oil to float to the surface, and then to float away in an excess of salt solution. This is a very important step in procedure. In suturing the muscles of the obese we often observe the fatty degeneration of muscle structure, and suturing through such muscle liberates free fat. Consequently, we must make it a rule to suture muscle-sheaths of fibrous tissue as far as possible without carrying sutures into the muscle itself, if it can be avoided. In fact, we try to make incisions in the obese in such a way as to avoid muscle-belly suturing later.

It is in final closure of the wound that one's nicest mechanical sense is brought into play, and here we fortunately have a resource of remarkable importance, but one which is commonly overlooked. This is the resource of atmospheric pressure. Most of us, when boys, used as a toy the wet leather sucking-disk fastened to a cord. This we would press over stones and then lift them from the ground. When our teachers explained to us that our ability to lift these stones with the leather disk was due to atmospheric pressure keeping the leather in contact with the stone, it gave an object lesson which we can remember to advantage in later years as surgeons dealing with fatty wound walls. No sutures are to enter the fat. The muscles having been sutured beneath the adipose layer, the skin is next sutured, and before making the final knot the adipose wound margins are pressed firmly together between the hands, in order to express any air or fluid. The suture then being completed, atmospheric pressure holds the fatty walls together just as snugly as the wet leather disk of the boy is held to the stone, and we get a very much smoother line of union than was customary when the special suturing for these tissues was employed. If any extra supports are required for the walls of the wound, we can place two squares of adhesive plaster at a safe distance from the margins of the wound line, and then lace these together through eyelet-holes made with a punch and eye-carrier. The catgut or silk lacing which actually touches the eyelets will not be aseptic, but with a little care the part lying next the wound may be kept safe. In order to allow the escape of any culture medium which may collect in the wound during the first twenty-four hours, I poke a tiny wick of gauze surrounded by gutta percha tissue into the wound at any convenient point, and this is removed on the following day. As a matter of fact, the extra support made of adhesive plaster need not be put on until two or three days after the operation, or at about the time when catgut sutures would begin to lose their hold. The ordinary snug bandage or binder will support the walls of the wound well enough until that time. In former years I thought it necessary to use various supports, such as silkworm gut or silver wire, carried deeply into the adipose tissue and fastened to lead plates upon the abdominal wall, but a certain amount of liquid fat must escape along the line of any such supporting suture, and this will either burrow or make its way to the surface, inviting the entrance of bacteria and interfering with the nice apposition which we get by depending upon atmospheric pressure alone.

THE EFFECT OF ALCOHOL ON PSYCHONEUROSES.*

By ALFRED GORDON, M.D.,

Associate Member of the Société Médico-Psychologique, Paris, France; Neurologist to the Mount Sinai, Northwestern General and Douglass Memorial Hospitals,

PHILADELPHIA, PA.

THE problem of alcoholism and the influence alcohol exercises upon various functions of the human organism have been the subject of serious studies. Sufficient data have been collected by highly competent observers as to the effect of alcohol on the structure of tissues and individual organs, as also on the higher cerebral processes. Such investigations have been conducted on individuals with supposedly normal organisms. Speaking in particular with regard to the effect of alcohol on the mental functions of previously normal persons, it has been shown that various psychoses may develop as a result of acute and chronic alcoholism, and that these psychoses may become irremediable and lead eventually to terminal dementia.

If alcoholism is capable of producing a deleterious effect on individuals with normal cerebration, the logical deduction follows that it must have a still more disastrous effect on individuals whose mentality is in some way already impaired. While such a conclusion is but a reasonable one and occasional isolated observations to this effect have been made, nevertheless a systematic study of the subject as an *ensemble* has not been placed on record.

The present essay deals with this particular phase of this highly interesting subject. The latter is important not only from a scientific and practical (*viz.*, therapeutic), but also from a medicolegal standpoint.

Since the writer, stimulated by the researches of Magnan and others, has been directing his special attention to various drug intoxications from a psychiatric point of view, he has succeeded in the course of a period of eight years in isolating 112 cases with various psychoneuroses, and has studied in them the relation of alcohol to the mental phenomena characteristic of these neuroses. Before entering upon the consideration of the subject I wish to call attention to this point, *viz.*, that in the group of psychoneuroses will be placed only those affections in which the psychic element predominates. Neurasthenia therefore will be excluded. Many writers, including Dubois, consider neurasthenia as a form of psychoneurosis. My observations on this subject are at variance with this view. I will therefore speak of psychasthenia, hypochondria and hysteria, as well as of intermediary forms which are not classifiable in the strictest sense of the word, but contain simultaneously elements of two or more of these affections, and which all show a disturbance of mental equilibrium.

The group of *psychasthenics* constitutes the largest number in my series. Out of 88 cases of this psychoneurosis, there are 10 with various forms of phobia, 29 are aboulia, 35 are affected with various doubts (*folie de doute*), and 21

* Read at the Semi-annual Meeting of the American Medical Society for the Study of Alcohol and Other Narcotics, Philadelphia, April 6 and 7, 1910.

present deficient inhibition power. Of the remaining 24 cases of the entire series, there were 9 hypochondriacs, 5 hysterics, and 10 unclassifiable cases.

The influence of alcohol on the evolution of these various affections has been followed up for a long period of time. The longest period of observation was five years and the shortest eighteen months. From the histories of these cases I learned that alcohol was administered to the patients at first for therapeutic reasons. Psychasthenic mental phenomena in the majority of cases are accompanied by a neurasthenic state. As the state of exhaustion usually appealed to the patient first, alcohol was thought of to combat the latter, and thus a regularity in its administration was kept up by the attending physicians. Evidently here the mentality of the patients was ignored.

The psychic make-up of psychasthenics is indeed a lamentable one. Consider, for example, the state of *special phobias*. The agoraphobics, monophobics, claustrophobics, those who are in constant fear of being overtaken by various diseases, are continually in a condition of overwhelming anxiety. The man who fears to find himself in an open space or to be in a crowd, or else to be all by himself in a closed space, to be alone in his room; the man that dreads incessantly to be affected by syphilis, tuberculosis, cancer, or dreads to touch others for fear of coming in contact with microbes and thus developing an infectious disease,—such individuals suffer intensely; they undergo mental agonies, unless relieved from the necessity of being in an open space, of being alone, of coming in contact with infectious elements, etc. We are familiar with the torturing state of anguish, with the tremor and general mental excitement when a patient suffering, for example, from agoraphobia is obliged to cross an open space; he hesitates, goes back, starts again, trembles, cries, and, when finally forced to do the act, he is overtaken by a physical and mental exhaustion. So it is with the cases of monophobia, of claustrophobia, of nosophobia, and of all forms of phobia.

The psychasthenic variety of *indecision, or doubt* (*folie de doute*), included in my series, presented the most pitiful picture. Some of them spent wakeful nights in doubt if the gas jets were properly turned off. They would try again and again, then light the gas and turn it off, repeat the act numberless times, and only toward morning fall asleep in a state of complete exhaustion. Others, men of business dictating or writing letters, would not be satisfied with the contents, doubt the meaning they wished to convey, then rewrite or redictate them several times; sometimes they would open and reopen already sealed letters doubting whether they had signed them properly or not. Others would not be able to sleep for fear the doors were not properly locked; they would get up, try the locks, go back to bed, and an hour later repeat the same act again. One of my patients, a teacher of languages, was suffering from *folie de doute* in regard to teaching his pupils. He wasted considerable time in repeating the lessons which he had taught on the preceding days because he always doubted whether he had imparted the proper rules of grammar to his pupils. Finally the condition became so tenacious that he could not advance in the teaching, the pupils deserted him, and he was compelled to abandon his profession.

The next variety of my psychasthenics was the class of *aboulics*, viz., indi-

viduals with deficient will-power. This was manifested in various ways. One patient, for example, was unable to adjust certain small parts of machinery, not because he did not understand his work, but because he could not overcome a certain feeling that overwhelmed him when during his work the moment came for adapting small portions of steel to each other. He did not possess the proper will-power to overcome the disagreeable sensation; he attempted several times to accomplish the work in vain. Another patient, a minister who from his early youth had shown evidences of neuropathic tendencies, after ten years of service began to develop signs of deficient will-power. The latter was particularly marked with regard to holding a sermon. He would commence to preach and in about ten minutes would be taken with cardiac palpitation and an extreme anxiety. He could not go on with his sermon in spite of repeated efforts. Another patient, a youth of eighteen, would often have difficulty in stepping over a loose brick or a leaf lying in the street. He could otherwise walk without the least hesitation, but, as soon as either of these two objects was encountered on the street, he could not go on; he would tremble and become so agitated that the tears would come to his eyes. He would then pass around these objects and avoid them through his entire walk. Examples of this nature could be multiplied, but they are all of the same order. To avoid repetition only the most striking instances are here presented.

Among my psychasthenics I also had cases in which a *deficient inhibitory power* was the chief manifestation. As examples I may mention a few cleptomaniacs, and particularly three cases, two men and one woman, who in passing on the sidewalks could not refrain from knocking on the doors of every other house. They were unable to overcome the intense desire of doing so, and, when occasionally they made an effort to inhibit the desire, they suffered, struggled with themselves, became extremely agitated, and finally had to give up the battle.

The various forms of psychasthenia in my series as above described present one common feature, namely, the presence of obsessions. Whether it be special fears, doubt, deficient will or deficient inhibition, the obsessive element predominates. The cerebral centers in all psychasthenics are invaded by a certain image or idea which remains fixed and suppresses all antagonistic images or ideas. This is not accomplished without a struggle. The tenacious idea is accompanied by a moral pain so intense that it subordinates the will, and the individual finds himself irresistibly forced toward acts of which he himself disapproves. The characteristic features of an obsession are therefore: energetic struggle against an invading thought and moral torture. Obsessions are episodic morbid manifestations met with in neuropaths. They are called "neurasthenic insanities." The condition is not an insanity in the proper sense of the word, but is an intermediary state between the neuroses and true insanities. It borders upon insanity and may do so for a long time without crossing the line.

Such was the mental status of the psychasthenics upon whom I endeavored to observe the effect of alcohol. As I said at the beginning, the psychasthenic state is frequently accompanied by a state of physical exhaustion. Alcohol, as

I learned, was given with the approval of the attending physicians to combat the latter. Thus a habit was acquired. Apart from the general effect that alcohol produces on every individual, of which I will not speak, the essential characteristic phenomena of psychasthenia were affected considerably. Those who suffered from phobias exhibited marked intensification of the same. Moreover if one variety of phobia was present, with the use of alcohol new phobias developed, so that two or several special fears became manifest. Thus, one patient who feared to remain in the room by himself in the daytime developed also agoraphobia. Another patient, who had a horror of chasing off flies, began also to fear being left alone in the room in the middle of the day.

Intensification and multiplication of the phenomena typical of psychasthenia were also observed in the other forms studied above. Doubts, indecision, deficient will-power and deficient inhibition—all became markedly exaggerated. Moreover, some of the patients developed mixed forms, such as a combination of doubts with deficient will-power, phobias with doubts, phobias with deficient inhibition. Besides, some of the patients eventually showed morbid impulses, such as attempts to strike, to assault, to commit rape, or to steal.

The instability of character, disposition and mentality characteristic of all psychasthenics naturally became accentuated in my patients. Their irritability and inability to stand contradiction, their restlessness and incapacity to adapt themselves to circumstances and conditions,—all reached their climax. As some of my patients were business men and others students of medicine and law, the effect of alcohol on their psyche was so disastrous that they were compelled to abandon their usual pursuits.

It was mentioned above that psychasthenia occupies an intermediary place between the neuroses and true psychoses. Individuals thus affected are constantly threatened with a mental breakdown, and the border line dividing psychasthenia from insanity may easily be overstepped when under the influence of a special cause. In my observations on psychasthenics I found that alcohol played an important rôle. Out of the 88 patients, 27, who could not be kept under control a sufficiently long time for want of the proper means, developed various psychoses which necessitated their confinement in insane asylums. The remaining 61 psychasthenics, in whom it was possible to control the pernicious habit, remained on this side of the border line. It was extremely interesting, however, to observe on them the effect of the use of alcohol and of its withdrawal. It resembled actually a laboratory experiment.

The above-mentioned intensification of the psychasthenic phenomena was clearly manifest while beverages were used by the patients. When, however, their use was forcibly discontinued, almost always a rapid amelioration followed. In some instances when it was possible to keep the patients under treatment and the relatives realized the wisdom of an isolated management, improvement and even disappearance of the original psychasthenic manifestations were obtained. It is equally remarkable that the reappearance of the former symptoms was very prompt when the patient would discontinue the isolation treatment and resume the use of alcohol. The deleterious effect produced by alcohol on my psychasthenics was too evident to be overlooked, and the benefit derived by them from the withdrawal of drink was most striking.

The facts obtained from this close observation naturally led me to consider the following question: Was the influence of alcohol in these cases different from its influence on normal individuals? My former studies of the alcohol problem with special regard to its rôle in mental disturbances¹ brought me to the conclusion that mental irresponsibility is not infrequently seen in individuals whose intoxication is quantitatively not excessive, but on whom small and even minute doses of intoxicating elements produce such an effect as to develop dangerous impulses; this is seen for example in neuropaths, imbeciles, the feeble-minded, etc. Reid Hunt's recent researches² show in the most conclusive manner that even extremely moderate amounts of alcohol may cause distinct changes in certain physiological functions and that under certain circumstances these changes may be injurious to the body. My present investigations demonstrate to me that what the last-named author calls "under certain circumstances" may be applied to the special make-up of psychasthenics, and, replying to the question formulated above, it can be safely said that the reaction of my psychasthenics to even very small amounts of alcohol was unusually exalted. I found that a teaspoonful of whiskey taken regularly two or three times a day for a brief period decidedly aggravated the condition. From the histories of the patients prior to the period when they came under my observation I learned that this reaction to alcohol was manifest at the very beginning, even in the first few days of its use. It was evident to the families that alcohol was pernicious to the patients, as their mental abnormalities suffered its effect, and yet in view of the accompanying asthenic state in some cases and in others for some other unknown reasons the administration of the poison was persisted in.

It is interesting, I believe, to show what the amount of alcohol used was, and the manner in which it was taken. As I mentioned above, alcohol originally was administered, as I found out, for therapeutic purposes. Brandy, whiskey, cognac, sherry wine, Mariani wine, champagne, beer—were the beverages used. The majority of my patients used very small quantities even after the habit had become established. The patients with means adhered to the same amount which they had at first been advised to use, viz., one or two teaspoonfuls of brandy, or one or two glasses of wine. The poorer class of patients, who could not be kept under strict surveillance, indulged considerably after they had become accustomed to alcohol. The most disastrous consequences followed among the latter category of patients, as a number of them developed psychoses. While the first class of patients suffered less, it is true, the above-mentioned aggravation and combination of psychasthenic phenomena were, nevertheless, striking. The quantities of alcohol consumed, though generally small and in some cases very small, but regularly taken, produced a decided bad effect on the psychasthenics, whose mental instability is in the majority of cases an inherent feature. Here the irregular, abnormal, deviated make-up of the nervous system is present from childhood. Any noxious element, be it an

¹ Journal of the American Medical Association, 1907; Old Dominion Journal of Medicine and Surgery, May, 1909.

² Hygienic Laboratory Bulletin No. 33, of the Public Health and Marine Hospital Service, February, 1907.

as the general term "psychoneurotics" could correctly be applied to them. The effect of small quantities of alcohol proved to be just as disastrous here as in the typical forms of psychoneurosis. Its prompt action was striking, and its gradual or rapid withdrawal was equally productive of effect. The reader is referred for details to the above study.

Conclusions.—The present statistical study appears to me highly interesting from the medical, psychological and sociological standpoints. We are in possession of certain pathological, clinical and experimental data showing with almost mathematical precision the effect of alcohol on the human body, as well as the knowledge that "under certain circumstances" the effect may be extremely injurious. The observations here recorded illustrate the fact that individuals affected with psychoneuroses present a particularly favorable field for the noxious effect of alcohol. Moreover, they prove that small quantities of alcoholic beverages produce a far more serious effect on psychasthenics, hypochondriacs and hystericals than on normally constituted individuals. This effect is also more prompt and more lasting than in normal conditions. Combination of several morbid phenomena is a common occurrence.

It is the experience of every neurologist and alienist that the number of persons suffering from various psychoneuroses is legion. Our modern life with its hereditary tendencies is the most powerful predisposing factor in the causation of psychasthenia, hypochondria, etc. Since the influence of alcohol is pernicious in cases of psychoneurosis, as can be seen from the present study, it is a matter of social hygiene to practise prophylaxis. In my previous studies⁴ I showed the effects of alcohol from a psychiatric point of view on individuals free from pre-existing mental disturbances. Symptoms of mental derangement, I said, may develop very insidiously but progressively and without preliminary acute symptoms in so-called moderate drinkers. If such is the observation made in normal individuals, psychoneurotic individuals stand the greatest chance of suffering more seriously and more promptly than others. This is clearly brought out, I believe, in my present study. Our warnings, our precautions must be augmented when we are called upon to deal with abnormal individuals whose psychic make-up reacts with great velocity to the effect of stimulation. Habits, and particularly pernicious ones, are acquired with the greatest facility by individuals with neuropathic or degenerative tendencies. Our precautions in that direction must extend even to the purely medicinal administration of alcohol. A knowledge of these facts must be possessed by the physician as well as by the sociologist.

⁴ *Loc. cit.*

POLIOMYELITIS; NEW FACTS CONCERNING ITS ETIOLOGY, EARLY DIAGNOSIS AND TREATMENT.

By TOM A. WILLIAMS, M.B., CM., Edin.,

Corresponding Member of the Société de Neurologie de Paris; Neurologist to Epiphany Free Dispensary, etc.,
WASHINGTON, D. C.

WITHIN the last decade, over eight thousand cases of this disease have occurred; and, of these, five thousand were in the United States of America. It is likely that at least a thousand people have been attacked in Pennsylvania alone this year; and in the District of Columbia a committee appointed to study the outbreak there has cognizance of over five hundred cases.

Thus, the situation is a serious one; and every new fact bearing upon the disease should be carefully weighed by each of us, until we have found means to prevent the spread of infection or have discovered a method of arresting the invasion before the nerve elements are destroyed.

Etiology and Pathology.—The disease is not a primary atrophy of the anterior horn cells from acute toxæmia. It is a constitutional disease due to a living virus which causes an inflammation of the connective tissues of various organs, including the lymph glands and intestinal follicles. It is accompanied too by congestion of the spleen and of the mucous membranes. The meninges are inflamed, and the whole central nervous system is more or less hyperæmic. The destruction, however, vastly preponderates upon the region of distribution of the anterior spinal arteries, which supply the anterior cornua, the injury to the motor cells in which produces the paralysis.

Those cells around which the inflammation is not so severe as to produce more than œdema quickly recover as the invasion ceases; and this accounts for the rapid return of power in some cases. Other cases where return of power is less rapid are accounted for by the reintegration of a destroyed axone the pyramidal cell of which has escaped necrosis. In other cases it is the fibers of the pyramidal tract which are mainly involved as they proceed toward the cells in the cornua, which themselves in part escape. Such a case is characterized by exaggerated reflexes and sometimes by Babinski's toe sign. Still another set of fibers may receive the chief impact; I refer to the rubrospinal fibers, which also pass to the anterior cornua cells, through which they regulate muscular tonus. The loss of their influence leads to hypotonia and tremor, without paralysis so long as the pyramidal cells themselves are not implicated. Of course, the clinical picture may vary in different parts of the body in accordance with the differing incidence of the inflammatory exudate upon different segments of the cerebrospinal axis; and, in the same segment, some cells may escape where others are attacked.

Conveyance of the Disease.—The salivary gland has been used by Levaditi to convey the disease from one monkey to another. In the Rockefeller laboratory they have conveyed the virus by spraying into the nares an emulsion of

nasal mucous membrane from a diseased animal. The most infectious material, however, is the spinal cord. The cerebrospinal fluid is infective only for a few days.

Carriers.—It is believed that the disease may be conveyed by the medium of a healthy carrier.¹ Some hold very strongly that abortive, undiagnosed cases are responsible for the spreading of the disease so widely. If this is the case, isolation of ascertained cases must be of little avail, especially as there are other facts which seem to point to the superfluity of isolation *as at present conceived* against this disease. An instance will make this clear.

Non-contagiousness.—A child aged 11 was attacked with acute paralysis at Bethesda, Maryland, this summer. She had been playing out of doors all day long for weeks with seventeen younger children, seven of whom were her own brothers and sisters. All of these were under careful observation by Dr. John Lewis, the Health Officer of the district, with whom I later saw the case. Not one of these children developed any sickness which would in the least point to poliomyelitis. No contact with another case could be traced, and none of the children had been to town for some weeks. It was the first case recognized at the time in the neighborhood.

Again, in the Washington Children's Hospital, some twenty-five cases of poliomyelitis have been admitted this summer, many of them in the acute stage. They were placed in the common ward, and at first no special precautions against infection were adopted. No patient in the hospital contracted the disease at that time. Latterly, spraying the nares has been employed, and a certain isolation has been maintained, in spite of which I understand that one case of poliomyelitis developed recently in a child soon after it left the hospital.

I need not instance further, for the number of examples where intimate contact has not led to contagion is legion.

Contagion.—On the other hand, instances where known single contact has led to the disease are not lacking. The Stromsburg, Nebraska, outbreak is the most striking example; and another has just occurred, and was observed by myself, during our study of the Washington epidemic.

At McKendrie, Md., in the practice of Dr. A. H. Perrie, the child of a railroad brakeman became febrile and paralyzed on August 1st. Fourteen days before, she had visited Chesapeake Beach, to which many Washington people resort. Nine days later, this child's cousin was attacked. The contact consisted of a visit to a church fair where the children were together some hours. In the meanwhile, the doctor's own daughter, about August 8th, was attacked by the disease, and later still another family who had been in contact had one child paralyzed. In the Washington report will appear the full history of the epidemic.

Proper Isolation.—It is manifest from facts of this nature that either, 1, the number of immunes to this disease is very great, or, 2, that certain bodily states render infection possible, or, 3, that the manner of conveyance is very

¹ Nebraska epidemic, Dr. C. A. Anderson; Ohio outbreak, Dr. Frost, U. S. P. H. & M. H. Service.

different from that against which precautions are being taken by those who advocate isolation. *Proper* isolation would consist of closing of the avenue of infection, and, as we do not yet know this in nature, only isolation from everything can possibly safeguard. It is possible that the disease is really conveyed by an insect either as carrier or intermediate host. No one can forget the complete failure of quarantine to prevent the spread of yellow fever until the false belief that it was carried by fomites was supplanted by the knowledge of its conveyance by the *Stegomyia fasciata*. Another instance is the very simple conveyance of Texas cattle fever by the *Boophilis bovis* tick under conditions formerly thought so extraordinary.

Is Noxa Protozoan?—Besides, evidence is not wanting to support the hypothesis that the infective agent may be a protozoön, in which case an intermediate insect host would be presumptive.

This evidence consists of the nature of the pathological reactions of the central nervous system. That there is a lymphocytosis of the cerebrospinal fluid during the acute phase is now well known. But no thorough study of the cytology either of fluid or neuraxis has yet been published. From 11 cases in different stages of evolution the subarachnoid fluid has been taken by the Washington Committee. A complete study of the cells has been made by Drs. Hough and Lafora. The method used is the precipitation of the cells by absolute alcohol, the imbedding of the precipitate, and its section and staining as if it were a tissue. Even in the earlier stages there is some pleocytosis. The polymorphonuclears are abundant (15 per cent.). It is likely that they originate in the meninges themselves on account of the inflammation there. After a few days, these cells are less numerous, and the pleocytosis consists mainly of lymphocytes, with some plasma cells. In some cases, mast cells are found. It is phagocytic macrophages which cause the disappearance of the polymorphonuclears. As many as twenty may be found digested in a single cell, where they exhibit pyrominophile and fuchsinophile reactions, and may assume forms resembling the Leishman-Donovan bodies found in some protozoan diseases. In the acute phase it is usual to find altered erythrocytes due to minute hæmorrhages where the inflammation is intense. Later on, altered lymphocytes, körnchenzellen, etc., occur.

A moderate increase of pressure was found early in the disease; and there was usually an increase of the protein content sufficient to react positively both by the methods of Nonne-Apelt and Noguchi.

No bacteria appeared in the stained preparations. Hough and Lafora are of the opinion that these appearances are in favor of the protozoan nature of the virus of poliomyelitis. Their researches will be fully reported in *Folia Neurobiologica*, and along with the report of the Washington Committee.

Early Diagnosis.—The *earliest symptoms* are usually one or more of the following: great weakness with apathy or irritability, sometimes including photophobia; sometimes slight coryza; marked insomnia is often present,² and this in a child without fever or intestinal trouble should excite suspicion. When

² Ph. Roy, Washington Committee.

this is followed by great weakness, and restlessness later occurs, suspicion is still stronger, and, when profuse perspiration begins without a very high fever, I believe that the diagnosis should be made, more especially if any reflexes have diminished or Kernig's sign occurs.

Cases of poliomyelitis have often been called *rheumatism*. This is on account of the severe pain and great tenderness which occur when the meninges are much inflamed. The distinction, however, is quite easy; for in acute rheumatism the joints themselves are inflamed, and hence are hot, red and swollen; whereas in poliomyelitis there is no special heat, redness or swelling of the joints or limbs. Besides, there is always a modification of the reflexes in poliomyelitis, and as soon as the horn cells of any segment are invaded the reflex arising in that segment is first diminished and later suppressed, often several hours before paralysis occurs. When the attack is mainly on the pyramidal fibers, either in the affected segment or high up in the cord, the reflexes may be exaggerated in that part of the body supplied by those fibers. Again, before the meningeal inflammation has extended to the cord, there may be for a time an exaggeration of reflex activity.

Diagnosis from Cerebrospinal Meningitis due to the Diplococcus Intracellularis. The Cerebrospinal Fluid.—In cases where restlessness and hypersensitivity usher in the illness this diagnosis is sometimes impossible, and, rather than lose valuable time in awaiting further symptoms, the meninges should be punctured and the fluid examined. Only in that way can we be sure of saving the child without damage, if it is the meningococcus which is at work. But, even in poliomyelitis, a lumbar puncture is rather an advantage than otherwise, for it relieves the pressure within the cerebrospinal sac, and probably diminishes congestion of inflamed structures. Examination of this fluid, too, may afford information, according to Flexner, there usually being a marked lymphocytosis in monkeys, the proportions being: polynuclears 40 per cent., lymphocytes 40 per cent., large mononuclears 15 per cent., eosinophiles 5 per cent.; while the blood-count was polynuclears 60 per cent., mononuclears 25 per cent., lymphocytes 12 per cent., eosinophiles 3 per cent., occurring with a distinct leucopenia. This diminution of white corpuscles did not disappear until the acute stage of the disease subsided. It will be noted that these findings are different from those revealed by the more thorough examination in human beings by the Washington Committee. Inoculation of a monkey with cerebrospinal fluid from an abortive case may be used for diagnosis of a dangerous carrier. Vomiting is often an early symptom, and headache is the rule. Rigidity of the neck and Kernig's sign are most marked in the meningeal type of onset. In some cases the extremities are cold in spite of the general fever.

TREATMENT.

I. Acute Stage.—There are two distinct indications: 1. The first is to *preserve life and prevent paralysis*. We have no certain means of accomplishing these objects; and the students of immunity are not hopeful of making a serum either to arrest the disease or to prevent its inception. Hexamethylenamine

has completely failed to arrest the inflammation in cord and meninges, although it has been thoroughly tested in the Washington epidemic this year. There is, however, a remedy of which we may hope that further trial will show the use. I refer to mercury, the power of which over some infections has become better realized since it has been employed by injection into the muscles or veins.

A Case.—I have, however, only had opportunity to test it in one case of poliomyelitis during the acute phase. It was done because of a sudden advance of acute ascending paralysis in an adult who had apparently improved on the preceding day, the fifth of his disease. By lumbar puncture also, 10 c.c. of cerebrospinal fluid were withdrawn. Headache and nausea were at once relieved, and the paralysis ceased to progress, while the temperature fell steadily. During three days, five doses were given of mercury bichloride of gr. $\frac{1}{3}$ and $\frac{1}{4}$ alternately. In another case of the same kind with which I was associated, the remedy was not tried, and the disease progressed to respiratory paralysis and death on the fifth day. Both these cases were adults seen in consultation, the first with Dr. John Lewis, of Bethesda, Md., the second with Drs. A. B. Hooe, and Roy, of Washington. It is true that the injections would greatly perturb a child who is hyperexcitable from meningitis; but a temporary disturbance is preferable to paralysis or death, and much less pain is produced by the small needle used than by the injection-syringe needle required when diphtheria or meningococcus diseases are in question.

If the disease is protozoal, the rationale of mercury is evident; and it is possible too that some arsenical derivative may be applicable.

Many have recommended cupping and other derivatives to prevent spinal hyperæmia. The rationale of this is at least doubtful when we reflect that the hyperæmia is nature's defense against further invasion.

Special indications are: The constipation and retention of urine; which should be met by copious enemata, and not by drugs to stimulate peristalsis, which is deficient not because of local toxins, but because of interference with innervation at the center. Sometimes, a catheter is required; but usually a flow from the bladder will follow a third or fourth enema, the first indeed often failing to expel any fæces.

2. The second indication is *to minimize the pain and irritability of the attack, and to secure rest and sleep.*

The warm bath or hot pack is most efficacious in some cases. It not only acts as a revulsive to sooth the nervous system and tranquillize the circulation by its warmth, but it has the mechanical function of supporting the limbs so evenly that there is no drag to stimulate afferent nerve impulses and add to the irritation due to the meningomyelitis.

Other measures which secure the same end are water or air beds; maintenance of the limbs in a semi-flexed posture by soft pads, and support of the feet by a firm one. Support of the back by a firm cushion, well warmed and not too hard, gives great relief, and the proper adjustment of the pillows under the neck is of great importance.

An immobilizing jacket has been of great service in giving comfort to some little patients.

An icecap sometimes causes great distress, and its use has no justification except the thoughtless routine of orthodoxy.

Finally, after the inflammation has subsided,—usually in about a week,—*galvanism* should be used as a direct means of diminishing the pain which is derived from the stretching and sagging of joints, ligaments and muscles caused by the loss of tonus in the muscle groups paralyzed, sometimes aggravated by hypertonus of antagonists not paralyzed. The relief given in this way is surprising to those who have not tried it.

An adult case seen with Dr. Ammerman, of Washington, would gain a tranquil repose of over two hours after half an hour's application of galvanism to his paralyzed muscles. At other times, restlessness and pain were so great that only by morphine could he secure any sleep at all, and his day was a perpetual misery. The hot bath was unavailable at that time.

II. *Treatment of Residual Paralyzes*.—Little children are reluctant to essay movements of a partially disabled limb. When it is an arm, they let it hang and use the other; if it is a leg, they make no effort and prefer to be nursed and waited upon. Suspension in water greatly facilitates movement when the muscles are feeble. We in Washington can fully confirm the experience of the New York Committee, who found out how easily the child could accomplish little movements in a bath which he was unable even to attempt when his limb was not so supported; and it is very easy for the mother or nurse to invent little play games to maintain the child's interest for an hour at a time while suspended in a warm bath. There is no danger in this so long as the water is maintained near blood-heat. The skin does not macerate, and the effect upon nutrition is most favorable. To stimulate the circulation in the limbs, they should be massaged several times a day. From this procedure one must not expect to procure regeneration of atrophied muscle and nerve. Surgeons know well that muscles supplied by a cut nerve atrophy and will not regenerate although they are massaged till doomsday.

Galvanism.—If, however, they are galvanized from the beginning, atrophy will not occur; for the exercise of their contractile functions maintains the integrity of the muscle elements, and it is only galvanism which can excite contractility when the motor nerve and its endings have degenerated. If treated by galvanism from the beginning, a living muscle cell will greet each regenerated nerve-fiber which pushes to its destination. If galvanism is not used, only the envelopes of dead muscle spindles will be met with. The time for these to regenerate must then be added to the duration of every case not treated by galvanism.

It is necessary to restate these simple physiological facts on account of the vogue of the pernicious statement that no treatment of poliomyelitis should begin until four months have elapsed. This doctrine is another instance of unthinking orthodoxy. But, if the elementary physiological considerations just presented make no appeal, I need only cite the high authority of Erb, Bergonié, Zimmern, and Zappert, the distinguished Viennese pædiatrician (added to that of Duchenne's final experience), who makes a practice of galvanizing the paralyzed muscles just as soon as the acute symptoms subside.

Mode of Application.—The current should be applied only to those muscles which are paralyzed, and the negative pole should be placed over the muscle itself near its tendon of insertion, while the positive pole is attached to a large electrode applied over the abdomen or other indifferent point. It is useless to stimulate the motor point except during the first two weeks, *i.e.*, before nerve-endings have ceased to be stimuable on account of degeneration.

Of course, contractures and other deformities should not be permitted, and, even when paralysis is complete and irrecoverable, they can be largely prevented by the maintenance of proper posture. Orthopædics is the resort of despair and, in many cases, the result of neglect of proper and early treatment in preventing deformities; but the weak muscles may be reinforced with advantage by elastic suspenders even after a few weeks.

**REMARKABLE PREVALENCE OF MIGRAINE IN A LARGE FAMILY,
ASSOCIATED WITH UNUSUAL SENSORY DISTURBANCES
IN THREE OF THE NUMBER.***

BY GEORGE E. PRICE, M.D.,

PHILADELPHIA, PA.

A STUDY of the following family history is of interest because of: 1, the remarkable prevalence of migraine; 2, the unusual sensory manifestations in several of the cases, and, 3, the association of epilepsy with migraine in one case.

The first case, William P., aged 21, a jeweler by occupation, came to the Neurological Dispensary of the Jefferson Hospital October 6, 1909, complaining of violent headaches occasionally preceded by numbness of the right side of the body. He stated that the headaches had occurred paroxysmally several times a year since he was six years of age, the longest interval between the attacks having been six months.

The headaches occur, as a rule, in groups of three or six in rapid succession; thus, if he has one attack, he is apt to have more, and, if he has the fourth attack, he expects them to continue until he has had six.

Many of his attacks are preceded by numbness and hypæsthesia, commencing in the toes, and creeping up until they affect the leg, arm, trunk, face and tongue. He states positively that these symptoms are most marked in the hand and foot, becoming less toward the proximal portion of the extremities, and being very slight over the trunk; they are present to a marked degree, however, in the lips and tongue. At times he has been unable to control the movements of the affected arm and leg.

The numbness lasts from twenty minutes to one hour, and is followed by severe headache on the side opposite the numbness, lasting from twelve hours to three days. Other attacks are preceded by visual disturbances; everything

* Read before the Philadelphia Neurological Society, February 25, 1910.

will look as if moving around in a circle; blurring of vision; hemianopsia. The paroxysms are always preceded by pallor and usually accompanied by vomiting, followed by relief of the headache. There is no history of unconsciousness.

I saw this patient in one attack, characterized by him as "a very light one." His face was extremely pale; his lips cyanotic. The speech was thick and sounded as if he were intoxicated or overstimulated. During the time I could observe him, he had occasional twitching of all four extremities, the arms flexing at the elbows and the thighs adducting. The numbness in this attack was limited to the left upper extremity, the lips and tongue, with a right-sided headache.

Inquiring as to the family history of William P., I secured the following interesting data:—

The grandparents, as far as could be learned, were free of any nervous condition.

On the maternal side of the house, the history is negative as to migraine, epilepsy, or insanity.

On the paternal side, *Mathilda* (aunt) has severe attacks of migraine. *Mary* (aunt) suffers from migraine, but not severely. *Susan* (aunt) had St. Vitus's dance when a child, and in adult life was exceedingly nervous. *Samuel* (uncle) acted peculiarly, and was said to have "softening of the brain." *L. W. P.* (father), aged 67 years, suffers from attacks described as follows: First, blindness for a few seconds, then numbness of arm, tongue and lips, followed by severe headache. At times his speech is affected to such an extent that the family cannot understand what he is saying.

The rest of this generation (13 in number) all reached adult life, but were free from any nervous disease.

In the *present* generation there are eight children: *Anna*, aged 42, has attacks of migraine which are not severe; she also has epileptic attacks. *Susan*, aged 40, has severe bilateral headaches accompanied by numbness in both arms; also "crying spells over nothing." *Kate*, aged 35 (examined personally), has attacks characterized by tingling of the right extremities, followed by marked numbness, then the headache. The numbness will last for twenty-four hours, and is followed by what she calls "partial numbness" for two days longer. While the numbness is marked she is unable to walk, and in one attack fell three times. Her attacks, with one exception, have been on the right side, with left-sided headache. She has never had any disturbance of speech, but has at times had blurring of vision and dizziness. The paroxysms bear no relation to menstruation. *Georgetta*, aged 32, never had migraine, but "laughs immoderately" and is "dropsical." *Kepner*, aged 30, has infrequent attacks of migraine, of unknown character. *Martha*, aged 27, has severe attacks of migraine during which she loses the use of the entire side; she has no visual symptoms. *Lemuel, Jr.*, aged 23, has infrequent attacks of migraine, character unknown. *William*, aged 21,—the youngest,—whose history has already been given in detail.

As shown by the above history, seven out of the eight members of this generation have migrainous attacks, and three have marked numbness affecting one-half of the body. While sensory phenomena are common in migraine,

visual disturbances are by far the most frequent premonitory symptoms, occurring in about 50 per cent. of all cases. *

Paræsthesias, such as numbness and tingling, and diminished sensibility are less common, and when they do occur are generally limited to the upper extremities, tongue and lips. That paræsthesia or hypæsthesia occurring in the lower extremity is rare we may infer from Sir William Gowers's statement, in his monograph "The Border-land of Epilepsy:" "I have never met with onset in the foot, and I have once only known the pregrainous sensation to pass to the leg." This is evidently the case described more in detail in his "Diseases of the Nervous System" as migraine occurring in a right-handed man, "in whom the attack began with left-sided hemianopsia, followed by tingling in the left foot, which passed up the leg and side to the mouth and tongue, and then speech was deranged."

It is of interest to note that the sensory changes, when they affect one-half of the body, conform to the type of organic anæsthesias and differ materially from the sharply defined hemianæsthesias of hysteria.

The relationship between epilepsy and migraine has been discussed by Liveing, Gowers, Keeling and many others, some claiming that these affections are closely allied, while others believe that there is but scant evidence of any definite relationship.

In one member of the family I have reported, epileptic attacks were associated with migrainous attacks, and I know of one case in which severe migraine has replaced petit mal during young adult life. An interesting phenomenon observed in William P., the twitching of the extremities during an attack of migraine, is at least suggestive of motor irritation.

Gowers speaks of the stupor, somnolence and delirium sometimes seen in migraine as being effects of the pain itself, but I would differ from him in this, believing these symptoms, together with the euphoria which often precedes the attack, to be the result of a general toxæmia.

Whatever the theory as to the actual cause of migraine, all must admit that vasomotor phenomena play an important rôle in the production of the symptoms. Thus unilateral and bilateral pallor or flushing of the face have been observed, also unilateral sweating. The copious diuresis or perspiration sometimes attending the termination of a paroxysm may also be considered as of vasomotor origin.

One observer, Whytt, suggested that spasm of the cerebral arteries was the cause of the headache; Mollendorf advocated vascular dilatation as the cause, while Latham suggests that the premonitory symptoms are due to vascular spasm and the headache to vascular dilatation.

From clinical observation, I believe there are two types of migraine, considered from the standpoint of vasomotor disturbance,—one in which there is vascular dilatation, and one with vascular constriction. In seeking for an explanation of the diminution or cessation of many of the migrainous headaches at middle life, it occurred to me that this might be due to a lessened vasomotor control of the blood-vessels owing to the physiological hardening and decrease in elasticity.

Recently, in discussing this hypothesis with Dr. S. Solis-Cohen, who has made exhaustive research in the line of vasomotor phenomena, I was interested to learn that, in his experience, hyperæmic conditions tended to cease after middle life, while ischæmic conditions continued or even became worse. Applying this observation to migrainous headaches, we may have the explanation why some cease at the involution period, while others persist.

THE STATUS OF TRACHOMA IN PHILADELPHIA.*

By C. P. FRANKLIN, M.D.,

Chairman of the Trachoma Committee, Pennsylvania State Medical Society,
PHILADELPHIA, PA.

TRACHOMA has been guarded against by the National Government since 1897, when, through the Treasury Department, the Public Health and Marine Hospital Service was directed to exclude at our borders all cases of trachoma, and the transportation company attempting to land such cases was fined one hundred dollars and forced to return each case to its original port of embarkation at its own expense; but the State of Pennsylvania took no cognizance of the disease until 1905, when, in "An Act to provide for the protection of the public health," the Assembly placed trachoma on the list together with twenty-six other diseases that were to be reported to the proper health authorities throughout the State, and some means were taken to prevent its spread. Trachoma was mentioned in the title of the Act, and again in section 1, directing which diseases should be reported, as well as in section 5, entitled "diseases not usually reported" unless the conditions are such as to require it for the protection of the public health. Following this, section 10 says: "No person shall knowingly let any room, house, or part of a house, in which there has been a person suffering from: . . . trachoma, . . . etc., without having had such room, house, or part of house, and all articles therein liable to infection, previously disinfected to the satisfaction of the Bureau of Health."

The above is embodied in the Regulations of the Bureau of Health authorized by the act of Assembly of 1905, and the Bureau of Health further, in its Recommendations, under Paragraph E, says: "In connection with those transmissible diseases for which the premises are not placarded, it is recommended that the case be isolated in so far as is practicable; that the discharges from the patients be disinfected; that the clothing worn by them be boiled or fumigated, and that the premises be rendered free from infection by disinfection."

In an act approved in 1909, entitled "An Act, to safeguard human life and health throughout the Commonwealth, by providing regulations for the control of certain communicable diseases and the prevention of infection therefrom and prescribing penalties for the violation of said regulations," the following provision is made: "Section 1. Be it enacted, etc., that every

* Read by invitation before the Wills Hospital Ophthalmic Society, Philadelphia, April 5, 1910.

physician practising in any portion of this Commonwealth, who shall treat or examine any person suffering from or afflicted with . . . trachoma . . . shall, if said case be located in a township of the first class, a borough, or a city, forthwith make a report in writing to the health authorities of said township, city, or borough . . . upon blanks supplied for that purpose, in which report he shall, over his or her own signature, state the name of the disease, and the name, age, sex, color, nativity, and occupation, if any, of the person suffering therefrom, together with the street, and house number of the premises in which said person shall be located, or otherwise sufficiently designate the same, the date of the onset of the disease, the name and occupation of the householder in whose family the disease may have occurred, the number of children in said household attending school and the name or names of the school or schools so attended, together with such other information relating to said case as may be required by said health authorities and the State Department of Health."

Section 14 of the same Act says: "No person shall, without previous disinfection, give, lend, sell, transmit, or expose any bedding, clothing, rags or other articles which have been exposed to infection from any of the diseases mentioned in section 1 of this Act. Provided, that such restriction shall not apply to the transmission of articles, with proper precaution, for the purpose of having the same disinfected."

Section 23 says: "The health authorities of the several cities, boroughs, and townships of the first class shall, at the end of each week, and for the fraction of each week occurring at the end of each month, report to the State Department of Health, upon blanks supplied for that purpose, a list of all cases of communicable diseases mentioned in section one of this act, which have been reported to them during said period; which report shall contain the name of each person suffering therefrom, respectively, and his or her age, sex, color, and nativity, together with the name of the disease and the date of the onset thereof, and, in the event of no reports of any of said diseases having been received by the aforesaid health authorities, respectively, during any said period, that fact shall be reported to the State Department of Health."

The last paragraph of Section 24 says: "Any physician, . . . teacher of a public school, principal of a school, superintendent of a Sunday-school, . . . or any other person or persons who shall fail, neglect, or refuse to comply with, or who shall violate any of the provisions of this act shall, for every such offense, upon conviction thereof in a summary proceeding before any magistrate or justice of the peace of the county wherein said offense was committed, be sentenced to pay a fine of not less than twenty (\$20) dollars, or more than one hundred (\$100) dollars, to be paid to the use of said county, or to be imprisoned in the county jail for a period of not less than ten or more than thirty days, or both, at the discretion of the court."

When a case of trachoma in a child is reported to the city health authorities, the city ophthalmologist is ordered to visit the case within one or two days, make a diagnosis, advise the parents or guardians of the patient as to precautions for the prevention of spread of the disease, direct treatment, either public or

private, and forbid the attendance of the child at school, public, private, or parochial, and so notify the school. If the diagnosis of the physician reporting the case is not sustained by the city ophthalmologist, the physician reporting the case is so notified, and has the right of appeal, when a diagnosis by a recognized expert ophthalmologist is made.

When the case of an adult having trachoma is reported, the case is visited as before, both at the home and at the place of business, and the same advice is given and explanation made to the employer as to the danger of contagion.

When a child is prevented from attending school, it cannot return to school until authorization is had from the city ophthalmologist.

A trachoma ward of 17 beds has been established at the Philadelphia General Hospital, under the charge of the Eye Staff of that institution, for the care of such cases of trachoma as may be sent there.

A tentative inspection of three public schools was made by the health authorities a few weeks ago, with the finding of a total of 4 cases of trachoma.

It is admitted that very few of the thirty assistant medical inspectors of the Bureau of Health are fitted, through experience with trachoma, to make a diagnosis of this disease.

In 1908, 42 cases of trachoma were reported to the Bureau of Health, and in 1909, 61 cases.

Inquiries at the leading hospitals of the city bring the information that no cases of trachoma are admitted to the house, except such as need operation, and where the hospital has facilities, in an eye-ward, for the care of the same.

In October, 1908, a Trachoma Committee was formed by the Medical Society of the State of Pennsylvania, in pursuance of a resolution passed at the annual convention at Cambridge Springs, Pa., in September of that year, and this Committee, consisting of four members, has been working on the subject throughout the State, endeavoring to gather information, both in the form of statistics and personal information, as to the condition of affairs regarding trachoma.

Cases were followed up in order to study their environment, and several schoolrooms were inspected.

The Philadelphia Bureau of Municipal Research, following along the lines of the New York Bureau of Municipal Research, took up the matter of trachoma in its investigations into the Health department of this city, and learning that the Trachoma Committee of the State Medical Society was engaged upon its own investigations, and believing that the number of cases of trachoma reported last year did not represent the total number present in the city, determined to investigate for themselves.

Coming to the Chairman of the Trachoma Committee, they at first proposed a joint commission consisting of the city health authorities and the Chairman of the Trachoma Committee, together with one other ophthalmologist, to be selected by the Chairman. This was later changed into a request that the Chairman form a Trachoma Commission, consisting of himself and five other ophthalmologists of the city, to be selected by the Chairman, to act as the representatives of the Bureau, and make such examinations into the public and

parochial schools and private institutions as would show definitely whether more trachoma exists in the city than is at present reported. As this plan was in consonance with the methods and aims of the Trachoma Committee, it was adopted, and the Trachoma Commission is already in tentative form, ready to plan its method of procedure and report results. Permission has been obtained for practically "carte-blanche" investigation into the parochial schools, and probably three will be selected,—one of 1400 children, largely of Polish origin; one of 400 children, largely of Hebrew extraction, and one of 300 children, mainly of slum origin, but situated in the center of the city. Work will be commenced upon these schools while formal permission is being obtained for the examination of several thousand public school children, and plans made for the selection of representative institutions for investigation.

Should the work of the Trachoma Commission show that such action is warranted, the Bureau of Municipal Research will then make such recommendations for the thorough and complete investigation of trachoma conditions and the control and elimination of the disease as are the logical outcome of the work of preliminary investigation, and the work of the Trachoma Committee will have its State-wide plans given a foundation of fact and backing that will go far to attain its ideal—the control and elimination of trachoma by the Commonwealth.

As a matter of interest to physicians, it should be mentioned that there is no law or regulation forbidding hospitals to take cases of trachoma for treatment as house patients; the decision as to the advisability is one for each hospital authority to make for itself.

NOTE ON THE GALACTAGOGUE ACTION OF INFUNDIBULIN.

By ISAAC OTT, M.D., AND JOHN C. SCOTT, M.D.,

PHILADELPHIA, PA.

IN the goat we have found in the early nursing period that infundibulin injected into a vein in the ear rapidly and greatly increases the flow of milk. The nipple had a cannula inserted into it, and a water aspirator produced the suction necessary to empty the udder. The milk aspirated before and after the injection was caught in a graduated flask and measured every five minutes. This increased flow of milk is not due to an increased amount of blood in the udder, as infundibulin contracts the arterioles. This fact can be correlated with the increased size of the pituitary in pregnancy, although in these cases the enlargement is chiefly in the anterior lobe.

Physiological Laboratory, Medico-Chirurgical College.

Authors' Abstracts

DELAYED MENOPAUSE: ITS DANGERS AND THERAPEUTIC INDICATIONS.

Presenting a Table of the Approximate Age at which, in Women Free from Pelvic Diseases, Disorder, or Displacement, the Menopause Should be Established.*

By A. ERNEST GALLANT, M.D.,
NEW YORK.

THE cessation of menstruation in the wholly healthy woman should occur abruptly, at an age-ratio dependent on the age menstruation commenced: late, if begun early, and early if begun late. So few women who are free from symptoms and apparently healthy at the time of the menopause apply for examination that accurate data on which to base the real normal relation of the beginning and end of the menses are extremely difficult to secure. We have therefore worked out the following table of "Approximate Ages" as a *practical working schedule* upon which to estimate the probable date of the menopause, as the age limit beyond which no woman should be allowed to go on menstruating without a thorough examination:—

APPROXIMATE AGE OF MENOPAUSE.

Menses begun at 10th year; should cease between 50—52d years.

"	"	"	11th	"	"	"	"	48—50th	"
"	"	"	12th	"	"	"	"	46—48th	"
"	"	"	13th	"	"	"	"	44—46th	"
"	"	"	14th	"	"	"	"	42—44th	"
"	"	"	15th	"	"	"	"	40—42d	"
"	"	"	16th	"	"	"	"	38—40th	"
"	"	"	17th	"	"	"	"	36—38th	"
"	"	"	18th	"	"	"	"	34—36th	"
"	"	"	19th	"	"	"	"	32—34th	"
"	"	"	20th	"	"	"	"	30—32d	"

These figures are intended to represent the age-limit in healthy women only, and vary widely from the averages collected by E. Kriegar, which include all classes of women, regardless of general or pelvic disease.

Among 3700 patients seen by the writer in the gynæcological departments of the Roosevelt Hospital, O. P. D., and the Northern Dispensary, there were 278 who had reached or passed the menopause, and, of these, 154 could recall

* Abstract of paper read at the Eleventh Annual Meeting of the American Therapeutic Society, held in Washington, D. C., May 5, 6 and 7, 1910.

their ages when menstruation began and ended. Of the latter number, in 73, or 48 per cent., the menopause had been delayed beyond the "approximate age," including

3 cases of carcinoma uteri, an average of	7.0 years.
17 cases of flexion, version or fixation, an average of	6.5 years.
15 cases of prolapsed uterus, vagina and bladder, an average of ..	6.2 years.
4 cases of late recurrence, an average of	10.75 years.
<hr/>	
39 cases, a total of 266 years, or an average of	7.00 years.

Of the same 3700 women, there were 484 over 35 years of age, 150 having passed the "approximate age" by a total of 837 years, or an average of 5.6 years, who were subject to one or another form of atypical menstruation amply justifying them in seeking relief from the burden of delayed menopause.

The menopause is "delayed" whenever menstruation is continued after the "approximate age," and this is always associated with uterine flexion, version, fixation, neoplasm, tubal disease, or syphilis, etc.

The *danger signals* in delayed menopause are: (a) atypical hemorrhage; (b) discharge; (c) pain; signals which, if disregarded, lead to disaster and death. The first case cited was that of a woman 40 years old, with cancer of the uterus, too far advanced to permit of radical operation. The symptoms were greatly relieved by the local application of acetone, and she died one year after coming under observation. The application of this agent, in incurable cases, to the excavated cervix, or after scraping away the cauliflower mass, as suggested by Gellhorn, Dr. Gallant said, had the effect of controlling the bleeding, abating the offensive discharge, and obtunding the pain to a remarkable degree. It also inhibits the growth, even though the fatal issue of the disease cannot be prevented.

The Dangers Incident to Delay.—1. Delay on the part of the patient in consulting a physician. Many women, through ignorance, false modesty, fear of examination, fear of learning the truth, or a wish to hide their condition from others, postpone this until too late.

CASE 2.—Mrs. McC., 55 years. Carcinoma of the uterus and anterior vaginal wall. The cervix a cone-shaped shell, excavated by the degeneration of the growth. Has had hæmorrhage and discharge for a long time. Of this variety of incurable cases he has met with about one hundred; some, naturally, varying in that the vagina was filled with a cauliform growth, and the rectum, bladder and vulva more or less involved; but all hopeless so far as any real curative treatment was concerned.

2. Delay due to absence of urgent symptoms:—

CASE 3.—Mrs. C. R., 42 years. Malignant ovarian cystoma. Menopause two years delayed. For the past three months her abdomen has rapidly grown larger. Backache when lying; pain on the right and center of abdomen; weight diminished from 175 to 140 pounds. Firm tumor reaching nearly to the umbilicus, on the left; uterus small and pushed against the symphysis to the right. Operation. Prognosis unfavorable.

3. Delaying examination. Not infrequently the gravity of the situation has not been appreciated by the physician, who temporizes and permits a malignant growth to advance to a dangerous degree, thereby lessening the chances of a cure.

CASE 4.—Mrs. M. E. L., 68 years. Medullary carcinoma of the uterus. Abdominal hysterectomy. Menses did not cease until some time after her fiftieth year. Backache and flowing off and on, with discharge since September 25, 1909. Up to February, 1910, no examination per vagina had been made by the physician attending her up to that time. Operation, February 23, 1910. What is the prognosis in a woman of 68 years? and how much more favorable, had the uterus been removed some months or years earlier?

4. Delay through failure to make a correct diagnosis, leading to minor operation, where radical extirpation was imperatively indicated:—

CASE 5.—Mrs. H., 42 years. Carcinoma of the body of the uterus. Vaginal removal of uterus and right (cystic) ovary. Menopause delayed four years. On account of excessive, irregular flow, her physician, two months ago, curetted the uterus and repaired a lacerated cervix. Six weeks later the flow recurred and has continued, off and on, for the past six weeks. Backache, not relieved by a pessary; has lost flesh and strength and usual activity. While this patient is now in good health, how much better and safer it would have been had she been examined at the approximate age and the enlarged, retroverted uterus removed.

5. Delay due to refusal of the patient to follow advice:—

CASE 6.—Mrs. M. B. Operation postponed thirteen years. She died something over a year after abdominal hysterectomy, having suffered all the tortures of malignant disease and vesicovaginal fistula. The floor of the bladder was infiltrated and it was accidentally perforated during the operation; attempted closure failed.

6. Delay due to the delusion that atrophy of a fibroid uterus will occur after the menopause:—

CASE 7.—Miss B. E. S., 45 years. Large fibroid uterus; excessive debility and anæmia from hæmorrhage. Abdominal hysterectomy. If the operation had been done earlier she would have been saved six months' or more loss of time, to say nothing of much mental and physical suffering.

7. Delaying operation for fibroma results in severe oligocythæmia and oligochromæmia, which seriously handicap the patient for subsequent hysterectomy, even in those who have not attained the approximate age.

CASE 8.—Mrs. R., 33 years. For four months had been losing an excessive amount of blood, notwithstanding the administration of hæmostatic drugs to the limit of ergotism. The fibroid uterus was removed by abdominovaginal hysterectomy, and she succumbed two days later; a victim to her own willful delay.

8. Delaying the removal of fibroma results in malignant degeneration of the growth:—

CASE 9.—Mrs. C., 55 years. Abdomen distended by a fluctuating tumor especially prominent on the right side, and which projects downward, filling the whole pelvic cavity. The temperature (101° F.) obscured the diagnosis and led him to evacuate through the vagina. More than a quart of debris consisting of disintegrated fibroid, clots and fluid escaped, followed by collapse of the tumor. The small uterus lay toward the left. In spite of rubber-tube and gauze drainage the tumor rapidly enlarged, and eight weeks later the mass was removed by celiotomy. Some of the gelatinous material must, however, have entered the peritoneal cavity, which again refilled, and she died in less than a month. Pathologists' report—sarcoma.

In cases of cervical or uterine polypi, which are not infrequently met with in delayed menopause, hysterectomy would scarcely be indicated, though at

times polypi appear to be the forebears of malignant disease. When examining women one must not mistake the bleeding coming from a urethral caruncle, anal fissure, or internal hemorrhoids, which possibly may suggest neoplasm.

9. Delayed menopause is most frequently due to or associated with *uterine obstruction*. At the meeting of the society last year, Dr. Gallant, by an analysis of 185 cases, had endeavored to show the importance of chronic obstruction to the uterine outflow, menstrual and intermenstrual, and the manifold serious consequences which might result from this, and he now reiterated his positive conviction that every menstruating woman, at whatever age, can be, is entitled to be, and ought to be promptly treated for all menstrual irregularities, pelvic pains, backache, headache, etc., not only for the relief of these distressing symptoms, but as a means of "heading off" the more serious danger, the development of benign or malignant neoplasms.

Prophylaxis.—At the approximate age the woman has reached the limit of fecundity; therefore the *prophylactic removal* of a useless, and probably dangerous, tumor-breeding organ is wholly justifiable, and the one sure method of putting an end to all the dangers.

Prophylactic hysterectomy for hereditary cancer of the uterus:—

CASE 10.—Mrs. K. K., 38 years; five living children. Has suffered from very excessive flow for twelve years. The large, heavy uterus was held firmly in the hollow of the sacrum, and could not be replaced bimanually. Owing to the fact that her mother and grandmother had both died of cancer, one at 65 and the other at 45, it seemed to him that to allow this uterus to remain would be to jeopardize, unnecessarily and unjustifiably a life so valuable and necessary to her five living children. It was therefore removed by the vaginal route, on May 17, 1905, and the patient is now healthy and very happy because the danger has been averted.

Having related a case in which prophylactic hysterectomy was done for external prolapse of the uterus and bladder, and one in which this was done for excessive hemorrhage due to syphilis, Dr. Gallant gave a summary of the various points treated of in the paper, concluding with the following: The large number of incurable cases met with of carcinoma uteri, degenerated fibroids, and malignant ovarian and broad ligament cystoma, which sometimes develop as early as the twenty-fourth year, shows the necessity of instructing mothers to warn their daughters of the dangers of delay whenever they suffer from dysmenorrhœa, menorrhagia, metrorrhagia, leucorrhœa, abdominal tumors, etc., especially after they have passed the approximate age.

ON MORBUS BASEDOWI*

By CARL BECK, M.D.,

NEW YORK.

As long as it is assumed that morbus Basedowi is produced by faulty chemical activity on the part of the thyroid gland, it is natural that the therapy

* Abstract of paper read by title at the Eleventh Annual Meeting of the American Therapeutic Society, held in Washington, D. C., May 5, 6 and 7, 1910.

of the so-called Basedow symptoms should be directed against the thyroid sphere. The most effective procedure naturally consists in thyroidectomy (notably without injuring the parathyroid bodies). The mortality of this operation still being a considerable one, however, a compromise is advisable. This is best reached by exsecting the largest lobe only, and treating the smaller one later on by the application of the Roentgen rays. Thus the danger of the operation is greatly lessened, and the size of the remaining lobe may be diminished at will by irradiation. The fact that the Roentgen rays influence the walls of the blood-vessels by producing an inflammatory reaction in them, so that a shrinking process is induced, was father to the thought of irradiation in morbus Basedowi. According to the statistics in the German translation of Dr. Beck's textbook on "Surgical Diseases of the Chest," most patients affected with Basedow goiters of moderate size improved considerably under simple Roentgen treatment. *Modus operandi*: Roentgen treatment is given through the diaphragm, with the patient in the sitting posture, for five minutes. In large goiters the anterior surface is irradiated for three minutes, while lateral irradiation of the goiter is kept up for one minute on each side. Small goiters are exposed in front only. When the patient shows much uneasiness during the séance, on account of tachycardia, frequent intermissions are made. As a whole, an exposure is advisable every two days until a slight reaction of the skin points to beginning dermatitis. Then the exposures are stopped for about a week, to be resumed again at the same intervals until there is a repeated reaction. At this period improvement also becomes manifest. If there are no severe reactive symptoms, the exposures may now be given once a week for a greater length of time. In the meanwhile the Roncegnio iron-arsenic water is administered in doses of a tablespoonful, three times a day. Cases of short standing generally improve quickly. The tormenting nervous symptoms, especially, disappear first, and the dyspnoea produced by the tachycardia decreases after a few séances. The exophthalmos disappears only slowly, and in some cases a distinct trace of it is left long after the disease is virtually to be regarded as cured. It stands to reason that, with the disappearance of the main symptoms, general euphoria becomes more and more marked.

Cyclopædia of Current Literature

ADDISON'S DISEASE, THE CARBOHYDRATE METABOLISM IN.

In view of the fact that the amount of glycogen present in the liver is regularly diminished in Addison's disease, the writers have tried the administration of an excess of carbohydrates in the diet of these patients. The result was a pro-

nounced diminution in the adynamia. Thus, in a case to which 200 grams of glucose were given, the muscular power, as measured with the dynamometer, rose from 25 to 40 kilograms. Adrenal extract was subsequently added to the carbohydrate treatment. The patient's general condition was bettered. Even

during periods in which the treatment was stopped the muscular power remained in the neighborhood of 50 kilograms. The sensation of fatigue previously present disappeared. Pitres and Gautrelet (*Société de Biologie; Revue de thérapeutique médico-chirurgicale*, August 15, 1910).

ANÆMIA, INJECTIONS OF DEFIBRINATED BLOOD IN SEVERE.

Subcutaneous injections of defibrinated blood, as advocated by von Ziemssen, having been found exceedingly painful, the author administers the injections intramuscularly in the gluteal region. Much of the pain is in this way avoided and better absorption takes place. Venous blood from a healthy subject is drawn off into a small Erlenmeyer flask, well stirred for ten or fifteen minutes, then filtered through wool. It is placed in the incubator at body temperature for half an hour to one hour. The author injects 10 or 20 c.c., occasionally as much as 50 c.c. Excellent results were obtained. The first case, one of grave pernicious anæmia, considered practically hopeless, began to improve after the second injection and made steady progress toward recovery. This patient received altogether 14 injections amounting to 735 c.c. of blood in eleven weeks. The hæmoglobin percentage rose from 18 to 92, and the erythrocytes from 1.2 to 4.8 millions. Similar benefit was noted in three other cases of profound chlorotic anæmia. The injections are repeated at intervals of three to eight days. Injections of 30 c.c. do not usually give pain. The only untoward effect observed is that the temperature frequently rises to 37.5° C. (99.5° F.). Arsenic should be given in conjunction with the injections, and the dose of it increased as soon as improvement under the injections becomes noticeable. O.

Huber (*Deutsche medizinische Wochenschrift*, June 9, 1910).

DIAGNOSES, A STUDY OF MISTAKEN.

Summarizing the results of comparisons between the diagnoses arrived at by study of the clinical data and the anatomic conditions found post mortem in a series of 1000 cases of various affections, the author draws a number of interesting conclusions. He lays emphasis, in dealing with the circulatory affections, on the possible presence of a presystolic murmur at the apex despite a sound mitral valve not merely in cases of aortic regurgitation (as noted by Flint), but in any disease which has resulted in marked enlargement of the heart, *e.g.*, chronic nephritis, pericardial adhesions, arteriosclerosis and hyperthyroidism. The murmur may be constant or transient, and may or may not be associated with a sharp, snapping first sound and an accentuated pulmonic second. The author finds it best to disregard all presystolic murmurs heard at the apex of a markedly enlarged heart, unless the murmur has been recorded before the enlargement took place or unless there is a clear history of a long-standing infectious process presumably involving the heart valves.

Aortic stenosis, the author has observed, may exist despite the presence of an accentuated aortic second sound, although, as a rule, this sound is diminished or absent. The condition may also exist in association with a "water-hammer" or "Corrigan" pulse, though the rule is against this. With long-standing cases of "rheumatic" endocarditis involving the aortic valve in patients under 35 years of age, aortic stenosis is almost always present (as proved post mortem) whether there are any characteristic physical signs pointing to it or not.

The diagnosis of chronic myocarditis, the author believes, should never be made clinically. A correct diagnosis of this state, of acute myocardial degeneration such as occurs in fevers, or of the fatty change observable in most cases of pernicious anæmia, is wholly a matter of luck, as there are no symptoms or physical signs that are constantly associated with any of these conditions. The evidence on which the diagnosis of myocarditis is ordinarily based points merely to a myocardial insufficiency such as may be produced by a great variety of causes without the presence of any granular, fatty or fibroid change in the heart. Gross fibroid myocarditis was not infrequently found at autopsy in hearts which were perfectly sufficient during life, and still more frequently there was no demonstrable lesion post mortem in hearts that were markedly insufficient during life.

The following suggestions are also offered by the writer:—

When a case is clinically one of tuberculous meningitis (in adults) call it miliary tuberculosis and you will rarely be contradicted at autopsy.

Never make a diagnosis of uræmia in a patient seen for the first time in an acute illness characterized by coma or convulsions. Such diagnoses rarely turn out right.

Never diagnose ptomain poisoning without definite chemical evidence. General peritonitis or a tabetic crisis is usually the correct diagnosis.

Make no diagnosis of hysteria, neurasthenia or psychoneurosis in a patient whose symptoms begin after the forty-fifth year. The actual diagnosis is likely to be arteriosclerosis, hyperthyroidism, dementia paralytica or pernicious anæmia.

Diagnoses of tertian malaria in

patients whose symptoms resist quinine more than three days are almost invariably wrong.

Bronchial asthma beginning after 40 usually spells heart or kidney disease.

Epilepsy beginning after 40. usually means dementia paralytica or cerebral arteriosclerosis.

Typical migraine is often a symptom of unrecognized brain tumor or chronic nephritis.

Most cases of "bronchitis" mean tuberculosis, bronchopneumonia or multiple bronchiectasis cavities.

Aside from the immediate results of acute infections (such as scarlet fever, diphtheria, tonsillitis and pneumonia) "acute" nephritis usually turns out to be chronic.

Acute gastritis and gastralgia usually mean appendicitis, gallstones or peptic ulcer.

Pus in or near the liver is often mistaken for serous or purulent pleurisy, for it produces identical signs in the right chest posteriorly.

An X-ray of the shin-bones may give the first hint of an active syphilitic process in the joints or internal viscera.

Diastolic murmurs at the base of the heart are very uncertain evidence of aortic disease unless there are characteristic jerkings in the peripheral arteries.

Cerebral localization applied to tumors, hæmorrhages and the like is still in its infancy. R. C. Cabot (Journal of the American Medical Association, October 15, 1910).

EXOPHTHALMIC GOITER, THE PRESENT STATUS OF THE TREATMENT OF.

In practically every case, according to the authors, it is our duty to treat the patient medically for three months. The most important factor in the treatment

is absolute rest—both physical and mental. The patient must remain in bed in the quietest room in the house, or in some place away from home in cases where there is any exciting or worrying factor in the household. The diet must be nourishing and easily digested, tea and coffee forbidden or greatly limited, and alcohol and tobacco absolutely forbidden. The tachycardia and to some extent the nervous symptoms can often be markedly diminished by an icebag over the præcordia, and occasionally constant cold applications over the thyroid are also of value. Cold sponges, cold, wet packs, and, in some cases, prolonged cool baths are found to exert a marked soothing effect. At times the bromides in doses of 10 to 30 grains three times daily may be successful in diminishing the tachycardia and nervous symptoms, but opium should be avoided whenever possible. In some of the more advanced cases with cardiac weakness small doses of strychnia are sometimes valuable. In the experience of the authors in a large series of cases the drug giving the best results has been the neutral hydrobromide of quinine, as furnished by Parke, Davis & Co. It is given in capsules of 5 grains each and to the limit of the patient's endurance, which is rarely more than three or four capsules a day. The drug must be continued for a long time. Very frequently the patients notice after a week or two of the treatment a diminution of the palpitation, the sweating, the tremor and other nervous symptoms, and in many cases the thyroid diminishes in size. The exophthalmos seems to be the last of the signs to disappear, and this may not be until after two or three years, while rarely the exophthalmos and tremor may persist more or less even

after all subjective symptoms have disappeared. When this last occurs, the dose of the drug should be cut down even to two or three capsules a week, the patient being cautioned, however, to resume immediately the former dose at the first appearance of any of the old symptoms.

If at the end of three months of medical treatment no improvement has taken place, we should preferably ligate the vessels. This may effect a cure. If not, and the patient later comes to the operation of partial thyroidectomy,—which is as yet the most satisfactory of the radical operations,—the ligation will make the operation easier and less dangerous. If the goiter is very large, it is well to remove only the larger lobe and then treat the remaining lobe with the X-ray and medical procedures.

Cases that show beginning cardiac failure should be operated upon as soon as possible after putting the patient in fair condition by medical treatment. Many cases, however, come to the doctor only after the myocardial changes have begun. Patients in this condition must be treated as cases of advanced myocarditis, for all treatment beneficial to this condition is also beneficial to the exophthalmic goiter. The medical treatment above outlined must be carried out. We must not expect an absolute cure in the cases where the myocarditis is advanced, though symptomatic recovery does sometimes occur. The earlier cases we may be able to cure, and if not we may improve their condition to such an extent that they can be operated upon with much less danger than before treatment. J. M. Jackson and T. J. Eastman (Boston Medical and Surgical Journal, September 15, 1910).

GONORRHOEA AND ITS COMPLICATIONS, VACCINE AND SERUM THERAPY IN.

The author has treated with gonorrhoeal vaccines 32 cases in which the urethra and adnexa were involved, and with antigonococcic serum 2 cases. Nineteen cases of joint involvement were also treated with vaccine, and 21 cases with serum. Of these, 6 suffered with both arthritis and urethral complications. Of the total number of cases treated with either serum or vaccine or both, 14.28 per cent. showed no improvement, 57.16 per cent. were improved, and 28.56 per cent. were cured.

Satisfactory results were noted with the use of serum as well as with vaccine in each of the various kinds of cases. The antigonococcic serum seemed to be of greatest advantage, however, in acute or subacute gonorrhoeal toxæmic cases—those which are often referred to as “gonorrhoeal rheumatism;” in the inveterate, long-standing cases it is, in the author’s opinion, of no practical value. The vaccine method gave satisfactory results in true gonorrhoeal arthritic cases—where undoubted metastatic conditions are present and where a gonococæmia probably exists. In the very acute attacks especially good results were noted; yet vaccine therapy is also to be recommended in the subacute and chronic cases of this type. In the urethral adnexa cases, especially acute, the vaccines were beneficial as regards decreasing painful symptoms and reducing the discharges. In this class of cases the serum had practically no influence. Neither was serum therapy as valuable in the metastatic or gonococæmic conditions as the vaccines.

The site of injection of either a vaccine or a serum is of no importance as to the therapeutic action, yet, on account of local symptoms that may

arise, the deep or intramuscular mode of administration, particularly into the gluteal region, is both the most desirable mode and place for the injection. The technique to be followed is the one which requires strict asepsis. As to the dosage of serum, it is desirable to commence with small doses, as 2 c.c.; to repeat or even to increase to 4 c.c. on the second or third day, and, if no improvement is noted, to increase to 6 or even 8 c.c., to be given every fifth day. In general, the smaller the dose, the more quickly it can be repeated; the larger the dose, the greater the interval between injections. Furthermore, the large majority of cases require fully 30 to 50 c.c. of serum. The dosage of vaccine must vary with the case. Comparatively small doses—10,000,000 to 30,000,000 bacteria—are usually sufficient for the acute gonorrhoeal joint cases. In the subacute or chronic cases doses of 30,000,000 to 50,000,000 bacteria have shown the best results. The author is inclined to believe that in both instances the best results were noted when injections were given about five days apart. L. E. Schmidt (*Therapeutic Gazette*, September 15, 1910).

HERNIA, STRANGULATED, SCOPOLAMINE HYDROBROMIDE AS AN AID TO TAXIS IN.

For two years the author has been making use of this alkaloid in cases of strangulated hernia for the purpose of paralyzing the motor intestinal ganglia and facilitating reduction. The gases in the strangulated portion of gut pass on beyond the seat of constriction and the gut often returns spontaneously into the abdominal cavity. The dose injected should hardly exceed 5 to 10 mgm. ($\frac{1}{12}$ to $\frac{1}{6}$ grain). The solution used should always have been freshly prepared. In

children less than 16 years of age the method is contraindicated. Luxardo (*Gazzetta degli Ospedali*, June 9, 1910).

**LEAD INTOXICATION, FIXATION ABSCESS
IN A CASE OF.**

A worker in lead was taken ill with colic, followed by prostration and the development of an icteroid hue. Lead paralysis was then noted, and finally grave encephalopathic phenomena became manifest. Purgatives, sulphur and honey, olive oil, baths and lumbar puncture having all failed to quiet the patient, 2 c.c. (30 minims) of turpentine oil were injected subcutaneously in the thigh. The abscess thus produced progressed in the usual way, the temperature rose to 39° C. (102½° F.), and on the following day the symptoms of cerebral excitation were considerably diminished. By the eighth day, the mental disturbance had entirely disappeared, well-marked torpor of the intellect alone remaining. The paralysis of the radial had, however, in the meantime become complete. The patient's general condition rapidly improved. Van Haecke and Leclercq (*Echo médical du Nord*, July 31, 1910).

**MASTOID OPERATIVE WOUNDS, SCARLET
RED AS A DRESSING IN.**

In view of the good results obtained in general surgery with scarlet red as a dressing, the author has given it a trial in the deep wounds resulting from radical mastoid operations, which are often so slow in healing. After a wide removal of bony tissues, including resection of the meatus, and closure of the postauricular incision, he first packs the cavity very tightly with iodoform gauze, which is left in as long as possible,—for a week, or at most two weeks. This packing being then removed, the

cavity is dressed on two or three occasions with ordinary sterile gauze. Subsequently (sixteen to eighteen days after the operation), the use of the scarlet red preparation, freshly prepared, is begun. He employs a paste containing one part of scarlet red to twelve parts of vaselin and eight parts of lanolin. After cleansing the cavity with 80 per cent. alcohol, narrow strips of sterile gauze are covered with a thin layer of the paste, and applied exclusively to the area over which the growth of epidermis is to take place. A strip of sterile gauze is then firmly applied over the red dressing. On the following day the dressing is taken out again and any red particles observed on the wound surface carefully removed. A simple vaselin or oily dressing is then used, to be left in two days, after which a second application of the red preparation is made. If the granulations become too active, this means that the paste has been used too freely or too often; they may be reduced by cauterizing with silver nitrate.

Twelve such operative cavities have been treated on this plan by the author. They all healed within seven weeks,—one-third less than the period usually required. Gaudier (*Annales des maladies de l'oreille; Revue de thérapeutique médico-chirurgicale*, October 1, 1910).

**NÆVI, TREATMENT OF, BY LIQUID AIR
AND SOLID CARBON DIOXIDE.**

The author describes the methods of employing these agents, and, from an experience of over a year with them, the results to be expected from their use. He applies liquid air on a swab of absorbent cotton of the same size as the lesion to be treated. Its action is regulated both by the time of application and the amount of pressure exerted. For a port-wine stain or capillary nœvus

an application of five to seven seconds suffices; for cavernous angiomata, nine to ten seconds may be necessary, and for warts as much as twenty seconds with firm pressure. Nævi often need more than one application; in the case of an intense port-wine stain, one should be content with a moderate diminution of the color after each application. The freezing of the skin is practically painless, the immediate effect being to make it hard and white. After thawing, the skin feels firmer than before the application, due to secondary hyperæmia and extravasation of serum, and within an hour or two a vesicle forms. Unless the application has been extremely short, this vesicle is not reabsorbed, and if not repeatedly punctured and drained it becomes infected. If possible, therefore, the fluid should be evacuated aseptically each time the vesicle or bulla fills up, and a pad of sterile cotton-wool then applied. When such draining cannot be efficiently carried out, a dressing of zinc ointment dusted over with zinc and starch powder should be ordered. After the impetiginous-like crust which forms over the area has fallen off, this taking place in about ten days, a delicate, smooth and supple cicatrix forms, which later becomes paler and paler until it is almost invisible. For stellate and capillary nævi and superficial pigmentary nævi this method of treatment cannot be improved upon. Lupus vulgaris, chronic patches of eczema, or lichen planus may be treated in the same way, and excellent results can be obtained in lupus erythematosus.

Lesions of smaller extent, such as small moles, nævi, warts, and lupus vulgaris nodules, can be treated instead by freezing with solid carbon dioxide. This acts much less rapidly than liquid air, but has the advantage that pencils

of the substance can be cut exactly to the required size, and even a lesion of pin-head dimensions can be removed without involvement of the healthy skin. The duration of the application varies from twenty seconds for a superficial plexiform angioma to sixty seconds or longer for a wart, firm pressure being made in each case to empty the skin capillaries; the usual time for a pigmented mole or cavernous angioma is thirty to forty seconds. Cavernous nævi usually need more than one application, the second being given about three weeks after the first. The action of such intense cold is not primarily that of a caustic, nor is it bactericidal, since prolonged exposure to liquid air does not kill even the less resistant germs. J. L. Bunch (Practitioner, October, 1910).

**OTITIS MEDIA, CHRONIC SUPPURATIVE,
ON THE USE OF NITRATE OF SILVER
IN.**

The variety of conservative measures tried in this affection shows, according to the author, the difficulty of attaining the desired result, viz., drainage and cessation of the secretion. Syringing has its advocates and is valuable, but unless the drum membrane be entirely gone, or nearly so, it is difficult with any type of attic syringe to adequately reach and remove all the débris or purulent material present. The use of powders is also open to the objection that they cannot be brought into direct contact with the diseased area unless the perforation be very large. Solutions of silver nitrate and other caustics have been applied on the cotton-tipped applicator, the same difficulty in reaching the entire area being often experienced. The author recommends the trial, in suitable cases, of the following procedure:—

Cleanse the suppurative area as thor-

oughly as possible, by syringing, wiping and suction as may be needed, removing any polypi, granulation or debris that may be present. If the perforation is very small, enlarge it. With the affected ear lying uppermost and absolutely horizontal, instill with a dropper a sufficient quantity of nitrate of silver solution to nearly fill the external canal. Keep the head horizontal for five minutes, then dry the canal thoroughly and put in a light wick of cotton or gauze. The author begins with 3 per cent. silver solution, and, if necessary, gradually increases the strength up to 20 per cent. As the silver does not penetrate very deeply, owing to its forming a coagulum at the point of application, it will, in most instances, have to be used a number of times. The diseased area, so far as it is visible, shows white when examined. The treatment is repeated from every other day to once a week. It works best in cases where the probe shows but little bare bone and but limited bony destruction. As a rule, the application is painless; in one case there was pain for a few hours, but the ultimate effect was excellent, resulting in complete healing of an ear in which suppuration had lasted for years. G. L. Richards (Boston Medical and Surgical Journal, September 8, 1910).

PARALYSIS AGITANS, ALTERATIONS OF THE DUCTLESS GLANDS IN.

The authors report two cases of Parkinson's disease which were associated with changes in the thyroid gland, and present further evidence pointing to the existence of a relationship between the ductless glands and this affection. In both the above cases the thyroid changes pointed to a functional insufficiency of the thyroid. In one case two of the parathyroid bodies were also

examined, but appeared to show no change of any importance. Parkinson's syndrome, the authors remark, has also been reported in association with myxedema, exophthalmic goiter, and scleroderma. The articular disturbances in paralysis agitans would appear to show parallelism with those of chronic rheumatism, the relations of which to thyroid insufficiency are now well established. Certain of the symptoms in Parkinson's disease have been treated with success by pituitary preparations (De Bille, Parhon and Urechie), and Brown-Séquard also obtained remarkable results in one case with testicular opotherapy. This affection generally appears, indeed, in the second period of life, when the reproductive glands begin to undergo processes of involution. A case in which the disease was associated with menstrual disturbances is also cited. These various facts serve to show, in the opinion of the authors, that disturbances of the ductless glands are frequently met with in paralysis agitans, and strongly suggest that systematic study—clinical, pathological and chemical—should be made of the glands in this disease. It is not possible as yet to state definitely the relations existing between the disease and functional or organic disorders in these organs. C. Parhon and M. Golstein (Congrès des médecins aliénistes et neurologistes de France, etc.; Bulletin médical, August 27, 1910).

PARESIS, X-RAY THERAPY IN.

In view of the occurrence, in the earlier stages of general paralysis, of a new formation of vessels and cells which occlude the capillaries in the cerebral cortex, the author, at the suggestion of Marinesco, of Bucarest, made use of the X-rays in the treatment of cases of paresis for the purpose of destroying

these new cell formations. In each instance all other treatment was stopped, even in cases manifestly syphilitic. The results of the method generally became apparent after ten to fifteen applications of the rays, covering a period of three or four weeks. The final results were very satisfactory, the intellectual state being brought back to normal in each case.

The author lays stress on the dosage of the rays required in order to insure destruction of the newly formed cells, feeble applications serving only to stimulate their growth. Up to a certain limit the efficacy of the treatment appeared to be proportionate with the strength of rays used. The greatest effect was exerted on the nervous centers which seemed to be the most seriously involved in the morbid process. Normal nerve cells and fibers, on the other hand, provided they have reached full development, are very resistant to the X-rays. The exposures lasted ten to fifteen minutes. One patient had 115 sittings, on alternate days, a month's rest being given after each course of 40 sittings. Details are given as to the precautions necessary to avoid producing alopecia. Severéanu (*Archives d'électricité médicale; Revue de thérapeutique médico-chirurgicale*, August 1, 1910).

PELLAGRA, TREATMENT OF.

Until it is disproved that spoiled maize or its products are factors in the causation of this disease, it will be wise, in the author's opinion, to prohibit all food and drink (alcoholic or otherwise) derived from this source. Many of the cheaper grades of flour are adulterated with "corn hearts;" therefore only the best quality of flour from a known and reliable source should be used by these patients. Other dietetic regulations depend altogether on the state of the

gastrointestinal tract. In general a liberal diet is indicated, the flesh proteins being specially well borne. The diarrhœa appearing early in the course of pellagra is of central origin, the author believes, and need not entail too limited a dietary. Later on, when the diarrhœa has become inflammatory, articles of food containing much cellulose or yielding an irritating residue may be eliminated with advantage.

With regard to the medicinal treatment of pellagra, the author gives a summary of the several recognized methods now in use. Dorsey has reported nine consecutive recoveries from using a combination of Fowler's solution and saturated potassium iodide solution (2 parts of the former to 1 of the latter) in ascending doses up to the physiological limit; diarrhœa was controlled with bismuth subgallate and powdered opium. This observer contends for an absolute milk diet with an abundance of lime-water while there is acute buccal and intestinal irritation. E. J. Wood advises, in the first two years of the disease, large doses of atoxyl ($\frac{1}{4}$ to $\frac{1}{2}$ gram) hypodermically, given every third or fourth day, and arsenate of iron on the other days. Lombroso uses arsenic in the form of Fowler's solution in doses of 5, 10, 15, 20 and 30 drops, or in the form of pure arsenous acid, dissolved in slightly alcoholized water, increasing up to tolerance, and suspending the drug for a few days from time to time. In the experience of many, however, Fowler's solution, the author remarks, has not been tolerated where gastrointestinal irritation was to any extent acute, so that preparations containing arsenic or arsenic and iron suitable for hypodermic use have necessarily been indicated. The types of cases generally not benefited by arsenic include the very young, well-

nourished and robust cases, those with systematized delirium, those with mental aberration of several years' duration, cases having lobar pneumonia, tuberculosis, albuminuria, or severe vertigo.

In two cases where vertigo was troublesome the author used the tincture of *cocculus orientalis*, as recommended by Lombroso, with evident benefit. It is given at first in doses of 3 to 5 drops daily, to be carried slowly up to 30 drops. Erythematous rashes, or even sloughing conditions of the hands or feet, may be alleviated or cured by oxide of zinc ointment or 2 per cent. boric acid ointment. Avoidance of the sun's direct rays, or even very bright light, is advisable while the erythema is present. For the intense burning of the hands and feet so often complained of, compresses saturated with a mild solution of bichloride of mercury, ice cold, and applied at frequent intervals, often give relief. For the sore mouth, a solution of thymol, 1 grain to the ounce of water, with a little alcohol as solvent, or a 25 per cent. solution of boroglycerin, are useful. Aphthous spots may be touched with silver nitrate, 10 grains to the ounce, every other day. Diarrhœa the author treats with a combination of bismuth, beta-naphtol and resorcin given with the official mixture of rhubarb and soda as a vehicle. This failing, powdered opium, tannigen, or heavy doses of bismuth subgallate are indicated. When the hydrochloric acid in the stomach contents is diminished or absent, a lavage every alternate day with a 1:1000 solution of boric acid, sodium salicylate, thymol, creolin or ichthyol is of advantage. It is well to start the lavage with saline solution before using the medicated fluid, and to conclude with plain water. In desperate cases direct transfusion of blood, either from a supposedly cured pellagrin or from a healthy

person, is justifiable. G. M. Niles (Medical Record, September 10, 1910).

PELVIC PERITONITIS, CONSERVATIVE SURGERY OF THE PELVIC ORGANS IN CASES OF.

Even after a careful study of each case of pelvic peritonitis, it is not infrequently difficult, the authors remark, to decide what is best for the ultimate welfare of the patient, *e.g.*, whether to do a hysterectomy and bilateral salpingo-oophorectomy which will certainly cure the patient of her condition, or to perform one of the conservative operations. The greatest advance in late years in the treatment of these cases, they believe, is the waiting policy advocated by Simpson, which consists in keeping the patient in bed, the judicious use of laxatives and the application of hot sandbags, together with the frequent use of a copious hot vaginal douche. The results of the palliative treatment are often most satisfactory. Large, painful tubes resolve themselves into small adherent organs, the ovarian condition subsides and tender adherent masses disappear.

From their experience in a series of 191 cases of this type and a study of the statistics of other observers, the authors believe it advisable that almost all pelvic inflammatory cases be subjected to a course of preliminary treatment before operation. By this method some cases will escape operation entirely, while the others can be operated on more easily, more quickly, and with less mortality. A greater number of cases will also be found suitable for conservative operation. If possible four to six weeks of normal temperature and blood-counts should precede each operation.

If pus be present which can be easily reached without traversing the peritoneal cavity it should be at once evacuated. In

a few cases, the symptoms may be such as to preclude the possibility of any delay. Accurate diagnosis and careful study of the cases will, however, show that the proportion requiring emergency surgery is extremely small.

The end results of salpingostomies are disappointing. Pregnancy rarely takes place, as the newly formed ostii quickly become occluded and cause a recurrence of symptoms. Conservation of a grossly normal tube in the presence of diseased appendages on the opposite side offers good results, especially if a course of preliminary treatment has been followed out prior to operation. Conservation of macroscopically diseased tubes is unsatisfactory.

Conservative ovarian surgery offers excellent results provided the ovarian circulation be not impaired and the organ be left in a good position. This was strikingly exemplified in the authors' series of 48 double salpingectomies, when one or both ovaries were spared, none of these cases requiring a second operation. In selected cases, ovarian resection offers excellent results. A small amount of ovarian tissue left behind will usually avert the sudden onset of the menopause. The reason many resected ovaries become cystic is because of interference of the blood-supply. When it is found necessary to remove both ovaries a hysterectomy should also be performed. Such uteri are useless and often cause subsequent trouble. If it is necessary to remove the uterus, and one or both ovaries can be spared, their preservation will prevent the unpleasant symptoms of the artificial menopause. For although menstruation will cease, the neuroses, which are the worst symptoms of the menopause, will be absent. J. G. Clark and C. C. Norris

(Surgery, Gynecology and Obstetrics, October, 1910).

RECTAL INFUSIONS, MEDICAL USES OF.

A study of the value of proctoclysis, carried out according to the principles of Murphy's technique, in medical affections, has been made by the author, who reports favorable results in a variety of conditions. The attempt was purposely made to achieve results with the aid of such simple apparatus as is available in any bedroom. One or two pints of tap water or normal saline solution, rather hot to the touch, were placed in the bag of a fountain syringe and introduced into the rectum through the hard-rubber tip commonly used for enemas. The bag was usually suspended so that the surface of fluid within it should be elevated six to eight inches above the anus, and the temperature in the reservoir maintained by the addition now and then of small quantities of very hot water or saline. The utility of the method was judged largely by the reaction of the kidneys, abundant diuresis being accepted as a sign of the efficiency of the procedure and *vice versa*.

From a considerable experience with the method the author has come to favor the exhibition of hot water by the bowel in cases with dropsical accumulations which do not yield to other remedies. He cites the instance of a man of about sixty years, with pleural effusion, general dropsy, and orthopnoea of myocardial origin, in whom hot water given by the "drop method" resulted in a progressive diuresis, which in a few days removed the dropsy and led to recovery of cardiac compensation. A comparison of the volume of fluid absorbed with that excreted quickly determines the availability of the procedure in any given case.

In typhoid fever beneficial effects were noted, and in lobar pneumonia proctoclysis with hot tap water was usually followed in a few hours by an abatement of the signs of toxæmia and especially by improvement in the mental condition. No class of cases was more obviously ameliorated than that suffering from delirium. In obstinate cases of delirium tremens the mental state was rapidly cleared up. Saline infusions were used in four cases of scarlet fever, two of them very severe, with admirable results. The casts and albumin found in the urine early in the disease disappeared before the patients left their beds. In cases of chronic pulmonary tuberculosis having a daily rise of temperature no decided benefit from proctoclysis was noted. But in intercurrent febrile, "grippal" attacks the comfort of the patient was greatly increased and the invasion apparently cut short. In the sudden flooding of the system with toxins from confined pus which not rarely occurs in tuberculous subjects, remarkable amelioration of the symptoms may follow saline proctoclysis. Henry Sewall (*American Journal of the Medical Sciences*, October, 1910).

RHINITIS, BACTERIAL FLORA OF THE NASAL MUCOSA IN THE PRESENCE OF.

The author presents the results of a two years' study of this subject, in which about 250 cases of diseases of the upper respiratory tract were examined. He believes that most of these infections of the upper respiratory tract are more serious in their final results than they are usually considered. They may not only be the precursors of diseased adnexa, of cervical adenitis, often of meningitis, but, by the absorption of formed toxins, they are worthy of consideration for the

part played in hæmic and vascular disorders leading to arterial hypertension and its sequelæ. The nasal secretions in each case were obtained for study by means of a platinum loop or sterile swab, since secretion blown from the nostrils is almost certain to be contaminated by cocci on the skin and hairs of the interior nares. Pyogenic cocci proved to be present in 73 per cent. of the cases. They are non-pathogenic locally, except as secondary invaders, and the probability is that only a limited number of strains are concerned in the causation of acute infections of the mucosa, and these are not genuine coryza. Diphtheroid organisms were detected in 35 per cent. of the cases. The evidence seems indicative, in the author's opinion, that the diphtheroids, particularly the *Bacillus segmentosus* of Cautley, are concerned in the production of so-called common cold in its typical manifestation in the nose, and there is much evidence that it occurs in epidemic form. Clinically the segmentosus infection is most likely to be in the nose, seldom in the trachea, but may cause otitis media. The *Micrococcus catarrhalis*, noted in 20 per cent. of the cases of rhinitis and considered as alone causal in 8 per cent., is much more general in its manifestation, and is probably also epidemic and productive of a rather more severe inflammation, though mild epidemics occur. It is most apt of all to invade the larynx and trachea, but may occur in the ear or nose and with variable virulence. It seems likely that the symbiosis of these two organisms—the segmentosus and catarrhalis—increases the virulence. The pneumobacillus of Friedlander, found in 7 per cent. of the cases, is much more concerned in chronic conditions and is probably identical with the ozæna bacillus. It is mostly con-

fined to the nose and sinuses. The pneumococcus of Fraenkel, also found in 7 per cent., flourishes in any part of the upper respiratory tract and, when virulent, has been found in pure culture. The influenza organism is conspicuous by its absence. W. Walter (*Journal of the American Medical Association*, September 24, 1910).

SERUM, ANTIMENINGOCOCCIC, THERAPEUTIC VALUE OF.

The author reports the results obtained with the serum in 103 cases of cerebro-spinal meningitis. The total percentage of deaths in the cases thus treated was 28 per cent., but this mortality falls to 9.8 per cent. if the cases already moribund when brought to the hospital and those which perished from complications in no way related to meningitis are excluded. In general, the use of the serum was found to shorten the disease, attenuate its symptoms, and reduce the number of complications. Out of 64 cases in which recovery had taken place more than a year before, only 6 showed organic sequelæ to the disease. Of these 3 presented bilateral deafness; 1 unilateral deafness; 1 impaired vision resulting from iridocyclitis, and 1 motor disturbances in the lower limbs of doubtful nature. Before the use of the serum, organic sequelæ had occurred in 28.5 per cent. of all the author's cases, whereas, in the above series, only 9.3 per cent. were thus permanently afflicted. Consecutive psychic disturbances, such as altered disposition, crying on slight provocation, and fits of anger, were very rarely observed in cases treated with the serum, and when present were never of a serious nature. Netter (*Société médicale des Hôpitaux de Paris; Bulletin médical*, July 27, 1910).

STATUS LYMPHATICUS, X-RAY TREATMENT OF.

Two cases of this affection are reported by the author in which good results were obtained with radiotherapy. The first case, suffering constantly from stridor and at frequent intervals from paroxysmal cough with marked cyanosis, was given sixteen treatments with the X-rays in a period of six weeks. Each time the rays were applied both anteriorly and posteriorly over the region of the thymus, the rest of the body being carefully guarded from their influence. At first the exposures lasted three minutes, later eight minutes. The second patient received twelve treatments in a like period of six weeks.

The effects of this method of treatment are summarized as follows: 1. Decrease in size of the hyperplastic thymus, with disappearance of the cough, stridor, and asthma. 2. Decrease in size of the enlarged spleen and lymph nodes. 3. The exhaustion and general feebleness of constitution give place to normal conditions of health and strength, and physical and intellectual growth are greatly stimulated. 4. A rapid disappearance of the marked lymphocytosis which characterizes this disease. 5. Excessive physiological action of the thymus gland is controlled. The slight return of symptoms, stridor, cough, etc., at intervals of three or four months in one of the cases, and their quick control by one or two exposures to the X-rays, indicate that the gradual regeneration of the thymus following the X-ray treatment may be accompanied by a gradual reproduction of the same pathological conditions, hypersecretion, etc., as were present before.

The disappearance of the lymphocytosis under the X-rays is so marked that a careful study of the blood state in this

condition will give important information both as to the efficacy of the treatment and the length of time it should be continued. It is perhaps wise to discontinue treatment when the lymphocytosis disappears, even though there still be left some cough and stridor; otherwise the chloroanæmia present, which is not improved under the X-rays, may be aggravated. Following the X-ray treatment in these cases, hypodermic injections of iron, with careful feeding and fresh air, may be necessary to restore the blood to a normal condition. B. K. Rachford (*American Journal of the Medical Sciences*, October, 1910).

SYPHILIS, ARSENICAL TREATMENT OF.

Sodium cacodylate in doses of 1 to 2 grains was injected into the muscles by the author, and found to have a striking effect on the syphilides, mucous patches and primary chancre. From the latter the spirochetes disappeared completely in forty-eight hours; the induration was markedly reduced in twenty-four hours, and the lesion became a soft, clean ulcer in seventy-two hours. From that time on it repaired with the same speed as an aseptic sore of mechanical origin would heal in the same time. The adenopathies, except those with suppurating central foci, disappeared in four or five days. Mucous patches repaired in from twenty-four to forty-eight hours, the advancing ulcers of the palate and posterior wall of the pharynx healed in from three to six days, and the perforating palatal ulcers repaired in their margins leaving the perforation in a healthy condition.

In a child nine months old with a papillary syphilide, the rash disappeared in forty-eight hours under the effect of a $\frac{1}{4}$ grain dose administered into the pectoral muscles. In a patient with

active gastric crises, two 2-grain doses, twenty-four hours apart, produced entire cessation of pain, while in former attacks the pain had lasted three weeks. A perforating ulcer of the palate continued to advance under daily injections of $\frac{1}{4}$ -grain doses of mercuric bichloride. Two injections of $\frac{3}{4}$ grain each of sodium cacodylate caused the gray surface to disappear and the margin of the ulcer to heal over in six days.

The writer suggests that the primary dose should be from 2 to 4 grains, and that it should not be repeated within three or four days unless there are special indications for it. J. B. Murphy (*Journal of the American Medical Association*, September 24, 1910).

SYPHILIS, TREATMENT OF, WITH EHRlich's "606."

This substance, chemically known as paradiamidodioxarsenobenzole hydrochloride, is described by the authors as a yellowish powder, which rapidly oxidizes on exposure to air and is therefore put up in vacuum tubes. It was the 606th member of a series of 630 substitution products of atoxyl prepared under the direction of Ehrlich and tested for their therapeutic effects on infected animals. It dissolves in water with difficulty, making a strongly acid solution. As the acid solution is very painful, the substance is administered either as a neutral base or as an alkaline salt. At first the drug was injected deeply into the muscles of the buttocks or into the circulation. It is now recommended that it be given subcutaneously according to the method of Wechselmann. From 0.3 to 0.6 gram of the drug is dissolved, according to this method, in a mortar in 1 to 2 c.c. of ordinary sodium hydrate solution. Acetic acid is then added drop by drop until the base precipitates out in

the form of a fine yellowish suspension. The precipitate is collected in from 1 to 2 c.c. of sterile distilled water, and either $\frac{1}{10}$ normal sodium hydrate or 1 per cent. acetic acid is added, as needed, until the reaction becomes precisely neutral to litmus. According as the reaction is or is not accurately neutral the injection will be followed by much, little or no pain. It is moreover desirable to subdivide the precipitate as finely as possible, which can be done by rubbing. By means of a suitable syringe the suspension is then injected subcutaneously below the shoulder blades after previous cleansing and disinfection of the part. There is often slight pain for a few minutes after the injection, and in some instances a slight swelling arises on the second or third day, but no bad effects are produced. There may be a slight rise of temperature and in some instances an urticarial eruption, but no specific toxic effects on the eyes, kidneys, or nervous system have been observed.

The authors report their observations in 14 cases in which the drug was used. In the first two patients they had considerable difficulty in getting the powder into solution, and the full dose of 0.3 gram they intended to administer was therefore not given. As a result no marked improvement occurred and the patients were put back on mercurial treatment. In the other 12, who received the full dose intended, and included examples of primary, secondary and tertiary lesions, the effects were truly remarkable. From three to four months after the injections no relapses were observed to occur. The serum reactions, all positive before the treatment, were negative at the expiration of the time mentioned, in all the patients who could be traced. None of the patients received more than 0.3 gram,

which is about $\frac{1}{2}$ the dose now being employed abroad. In a case showing obstinate syphilitic lesions of the palms, included in the series, the result obtained was far more rapid than any the authors had seen after the use of mercury. In another case with multiple initial lesions of the lips of two months' duration, with secondary skin manifestations, complete resolution of the chancres took place in about ten days. The patient, who had been anæmic and depressed before the treatment, also showed a marked change in his entire appearance.

In all but a few exceptional instances a single dose of the drug has sufficed to cause rapid disappearance of the lesions of syphilis and equally rapid improvement in the general condition of the patients. In the few instances in which rapid effects were not achieved, the dose given was, as is now established, too small, and in many of these cases a second, larger injection brought about the desired result. H. J. Nichols and J. A. Fordyce (*Journal of the American Medical Association*, October 1, 1910).

TUBERCULOSIS, DIAGNOSIS OF.

The great need in incipient pulmonary tuberculosis has been for some reliable sign which would suggest the presence of the disease or help the practitioner to locate the lesion when one is suspected. The author describes two easily elicited physical signs which he has found useful for the early detection of small apical lesions. The first consists of lagging of one apex behind the other in respiration in a one-sided lesion, or lagging of both apices in a double apical lesion. In testing for this sign the examiner stands behind the patient, who is seated, and so places his hands that the thumbs are over the supraspinous fossæ and the fingers extend down over the anterior

chest wall. Any irregularity in the entrance of air into either apex is quickly noticed.

The second sign is rigidity of the muscles over the seat of the lesion. The author claims not to have seen a single instance where the muscles covering the apex of a lung were in spasm in which there was not an inflammatory process (usually tuberculous) in either that apex or the pleura covering it, and believes rigidity of the neck muscles, intercostals and pectorals to be as constant in early phthisis as rigidity of the abdominal muscles in the presence of inflammation of the underlying viscera. If the lesion is on the anterior portion of the apex the sternocleidomastoid, scaleni, pectorals, or intercostals, singly or in combination show the spasm; if the lesion is on the posterior aspect the trapezius, levator anguli scapulæ and rhomboidei show it. The examiner must have familiarized himself with the natural contour of the neck and normal consistence of the muscles. In the case of the trapezius, levator anguli scapulæ and pectoral it is also necessary to take into consideration whether the patient is right- or left-handed, as the spasm gives the same impression as that of a muscle hypertrophied from use, *i.e.*, the muscle is firmer to the touch. The sternocleidomastoid and scaleni may, however, be depended upon in most cases. The sign can best be detected by a very light touch. F. M. Pottenger (New York Medical Journal, September 3, 1910).

TUBERCULOSIS OF THE URINARY TRACT, VALUE OF TUBERCULIN IN.

In the author's experience tuberculin has been chiefly valuable in stamping out the secondary processes in the bladder and ureter after the more massive lesions have been dealt with surgically. He

divides the cases in which it was used into two classes: 1. Those in which the disease had been apparently completely removed, as in unilateral kidney infections without bladder involvement. In these the use of tuberculin resulted in permanent and prompt wound healing in contrast to those cases in which a sinus follows operation, leading either to the stump of the ureter or to the pedicle. 2. Those cases in which, though the principal focus of the disease had been removed, a certain amount remained, *e.g.*, unilateral kidney lesions with bladder involvement, and unilateral lesions of the epididymis and vas with involvement of the prostate.

In each case injections were begun immediately after operation, a bouillon filtrate prepared by Trudeau being employed. The treatment was started with minimal doses, generally about .005 mgm., a dose so small as not to produce a reaction in these cases. The dose was then fairly rapidly increased until 0.1 mgm. was given, the interval between injections at first being three or four days, later about a week. The injections were continued and the dose increased up to 10 mgm., always provided no reaction occurred, this point being ordinarily reached in about three months, when in cases of the first class the injections were stopped and the patient discharged. In cases of the second class, the injections were generally continued at a maximum dose until the patient was free from symptoms or six months had elapsed. In some of the cases with larger doses, reactions both local and general occurred, but these did not seem to do harm and in some cases were followed by distinct benefit. In all the cases the treatment afforded some relief of the symptoms, and in many the relief was very marked. Hugh Cabot (Boston

Medical and Surgical Journal, September 22, 1910).

TYPHOID FEVER, TREATMENT OF, WITH VACCINE.

The author reports 32 cases in which a comparative study of the value of treatment by the older method of hydrotherapy, either by the tub bath or sponging, and by vaccine, was made. Twenty-one cases were treated by hydrotherapy, and 11 cases with vaccine. The diet in general was of the high caloric variety. No drugs were employed, but strychnine and whiskey were used as stimulants in the severe cases. In the cases treated by vaccination the vaccine was given subcutaneously in the gluteal region every second or third day, each dose being either 10 or 50 million bacilli, except in a very few instances where 250 million were administered. No fever reaction from the injections was obtained. Occasionally a slight local erythema or itching was noticed at the point of injection, which cleared up without treatment. No difference in clinical or laboratory effects could be noticed between the smaller and larger doses.

The results noted were briefly as follows: The agglutinins were markedly stimulated by the vaccines, complete agglutination being often observed in dilutions as high as 1:500 to 1:1000, while cases without vaccines showed incomplete agglutination in 1:80 dilution. In but few cases did the febrile course seem shortened, but the abrupt change from the sustained fever to the amphobolic type seemed hastened by vaccination. The average day of defervescence was about the same for the vaccination and the hydrotherapy cases, and the temperature averaged equally high in both series. Hemorrhage was equally frequent though not so severe in the vaccinated cases. Relapses were noted

with more frequency,—30 per cent. as compared with 10 per cent.,—but were in all cases mild. No death occurred in the vaccinated, though these were in no way selected cases; four occurred in the other series,—one each from hæmorrhage, toxæmia, perforation, and pulmonary thrombosis. Headache, gastrointestinal symptoms and toxæmia were far less frequent in the vaccinated than in the other cases, and the absence of discomfort seemed striking, while convalescence was more rapid. Histories of four cases are given which illustrate the advantages of the vaccine treatment in these latter respects. A. W. Hollis (Medical Record, October 8, 1910).

WOUNDS, INFECTED, AND BURNS, TREATMENT OF.

In infected, contused wounds the authors strongly recommend a mixture of one part of iodine tincture with five parts of hydrogen peroxide solution. The mixture should be prepared just before use, wherever possible.

In burns their procedure is as follows: After opening the vesicle under aseptic precautions the surface of the burn thus laid bare is carefully dried by means of sterile gauze, without rubbing. A piece of sterile gauze is covered with a layer of paste consisting of 30 parts of vaselin, 10 parts each of starch and zinc oxide, and 1 part of salicylic acid. The gauze is then applied to the burn, care being taken that the dressing does not draw on the various portions of the open area. At succeeding dressings the paste remaining from the previous dressing must be removed with dry gauze. The advantages claimed for this preparation are: antiseptis, rapid healing, and absence of all tendency to contract in the scar. Rodolfo and Rivarola (*La Semana Medica*, Buenos Ayres, June 16, 1910).

Clinical Summary

Of all practical articles and abstracts that have appeared in the Monthly Cyclopædia and Medical Bulletin during the current year.

Actinomycosis. **DIAGNOSIS.** Presence of corpora flava not essential to diagnosis of this condition. Repeated examinations of suspicious material often required. Only injection of actinomycotic pus or ingestion of material upon which actinomyces is grown will reproduce actinomycosis in animals; inoculation with pure cultures unsuccessful.

TREATMENT for actinomycosis of uterine appendages: 1. Extirpation and drainage. 2. For fistula, application of tribromophenol bismuth or irrigation with copper sulphate. 3. Potassium iodide internally, up to 75 grains daily. *Wagner.* Page 290

Addison's Disease. **TREATMENT.** Begin with 3 grains of desiccated adrenal gland three times daily after meals, and gradually increase the dose till temperature and pulse become normal; then maintain last dose. *Sajous.* 75

Adrenals, Diseases of. **DIAGNOSIS.** Adrenal insufficiency is suggested by: 1. Circulatory disturbances (small pulse, low tension, tachycardia, chilliness, white line). 2. Digestive disturbances (anorexia, vomiting, diarrhœa or constipation). 3. Nervous disturbances due to toxic irritation of plexuses around adrenals. 4. General disturbances (anæmia, emaciation, progressive amyotrophy). Diagnosis confirmed by benefit from organotherapy. *Boinet.* 27

Anæmia. **TREATMENT.** Seven cases of severe anæmia greatly benefited by transfusion of only 5 cubic centimeters (75 minims) of human blood. No benefit in cases of leukæmia. Transfusion of this amount generally harmless, though blood from certain persons showed some toxicity. *Weber.* 63

In anæmia due to auto-intoxication from gastro-intestinal tract, as often occurs in chlorosis: 1. Favor gastric functions by proper diet. 2. Secure regular bowel movements by laxatives. 3. Begin use of iron, giving following pill: Subcarbonate of iron, 0.10 gram ($1\frac{1}{2}$ grains); powdered aloes 0.02 gram ($\frac{1}{2}$ grain); extract of rhubarb, 0.05 gram ($\frac{3}{4}$ grain); two pills before meals. *Huchard and Fiesinger.* 298

Gastric hyperæsthesia in anæmia and chlorosis favorably influenced in several instances by aluminium silicate, given in the form of neutralon in doses of $\frac{1}{2}$ to 1 dram in 3 ounces of water, $\frac{1}{2}$ to 1 hour before meals. *Rosenheim and Ehrmann.* 352

Aneurism, Aortic. **DIAGNOSIS.** Early positive diagnosis only by the X-ray. Expansile pulsation not constant. Abnormal

dullness a valuable sign when present. Most constant sign is systolic bruit; present in 11 of 19 cases. Tracheal tugging in but 2 cases. Earliest and most constant symptoms were dyspnœa and cough. Interference with passage of bismuth capsule the size of a quarter through œsophagus found present in every case tested (by X-rays); especially valuable in small aneurisms growing back from transverse part of arch and shows œsophageal obstruction before dysphagia appears. *Lange.* 349

Angina Pectoris. **DIAGNOSIS.** Presence or absence of signs of organic disease at root of aorta should be ascertained. Signs of general arterial or aortic disease coexisting with history of precordial pain warrant diagnosis. A slight harsh clicking sound accompanying or following the sound of aortic closure, suggesting to the ear a roughening of the aortic cusps, is of value in the diagnosis. *Butler.* 22

TREATMENT. Erythrol tetranitrate has a less marked but more lasting effect than nitroglycerin. Especially indicated in those patients who are awakened at night by the pains. *Huchard and Fiessinger.* 172

Ankylosis. **TREATMENT.** Fibrolysin used with benefit in joints ankylosed as result of rheumatic affections. Single dose used was 2.3 cubic centimeters (37 minims) subcutaneously, sometimes more; largest total amount given was 117.3 cubic centimeters (4 ounces). Untoward effects: sometimes sensation of fatigue on day of injection, and occasionally slight local inflammatory reaction, which disappeared with moist dressings. Best results where ankylosis due to extra-articular connective tissue; less improvement in presence of pus and in gonorrhœal cases. Used in conjunction with hygienic and dietetic measures, warm sulphur baths, and later active and passive movements. *Knotz.* 124

Appendicitis. **DIAGNOSIS.** Following sign often useful in diagnosis between appendiceal and pelvic inflammation: Stretching skin of abdomen slightly to increase its translucency, veins internal to anterior superior spine, and running upward and slightly inward, will be found darker than elsewhere when appendix involved. *Skinner.* 350

Appendicitis, Acute. **TREATMENT.** Where patient carried through an attack without operation, give only liquid diet till appendix removed. In perforative or gangrenous cases suffering from beginning diffuse peritonitis, gastric lavage, slow instillation of normal saline by rectum and abstinence from ca-

thartics or food by mouth are indicated; 97 per cent. can later be safely operated. *A. J. Ochsner.* Page 360

Appendicitis in Pregnancy. TREATMENT. In severe cases operate without delay. Mild cases do not demand operation unless there are frequent attacks. When near the end of gestation or in labor, terminate pregnancy and remove appendix immediately after. *Findley.* 160

Arteriosclerosis. DIAGNOSIS. Careful ophthalmoscopic examination frequently reveals the earliest signs of arteriosclerosis. *Bruner.* 23

TREATMENT. In 2 cases of arteriosclerosis in diabetes, blood-pressure was lowered and arteries rendered softer by treatment with dried thymus, 30 to 120 grains three or four times daily. Author uses fresh thymus of calves, dried by himself. *Gwyer.* 424

Following method recommended: Give patient light bath for a few minutes, bringing blood to surface and causing sedation. Follow this with static breeze for five to ten minutes—helpful in asthenia. Then apply high frequency current for ten to fifteen minutes. Diminution in arterial pressure follows. Séance should always cease when pressure falls to normal, otherwise harm may result. In intestinal atony complicating arteriosclerosis, faradic current, applied over abdomen, may be helpful. Mercury, iodine, iron and arsenic also to be administered, according to indications. *Satterthwaite.* 407

Arthritis Deformans. TREATMENT. Progress of disease often stopped by removal of causes of irritation, such as inflamed appendix, hæmorrhoids, etc. Where primary lesion obscure or no longer operative, best results obtained indirectly by relieving pain in affected joints. This is done by applying an absolutely rigid retention dressing, with the limb in such a position that the antagonistic muscles are in absolute equilibrium. If limbs cannot be brought into desired position without extreme pain, contractures are broken up under anæsthesia, and tendons lengthened, if necessary, by tendoplasty. Plaster-of-Paris dressing is applied, and allowed to remain until pain and irritation have subsided. A new plaster mold reinforced with basket splints and wheat gluten bandages is then substituted. *E. H. Ochsner.* 221

Ascites. TREATMENT. Autoserothrapy retards transudation into peritoneum and produces lasting polyuria. Under local anæsthesia withdraw a little fluid from peritoneal cavity with sterile hypodermic syringe, and at once reinject in subcutaneous cellular tissues. Repeat at six-day intervals, injecting progressively larger doses of ascitic fluid (3, 5, 8, and 10 cubic centimeters). Continue treatment for two months. *Audibert and Monges.* 160

Asphyxia. TREATMENT. Adrenalin, slowly administered intravenously; 10 drops of 1:

1000 solution in 1 dram of saline solution. Artificial respiration. *Sajous.* 75

Asthma. TREATMENT. To arrest paroxysms, adrenalin (5 to 10 minims of 1:1000 solution in 1 dram of normal saline) may be slowly injected into a superficial vein or hypodermically. *Sajous.* 75

Thyroid and corpus luteum preparations found valuable in 7 out of 14 cases. Thyroid beneficial in 6 cases; corpus luteum in 1. Began with dose of only 0.025 gram ($\frac{3}{4}$ grain) of powdered thyroid, given in cachet once daily; later increased to 0.10 gram ($1\frac{1}{2}$ grains). Asthmatic paroxysms ceased or were greatly diminished. Also useful in asthmatic dyspnoea of renal and gastric cases and in ordinary nasal asthma or hay asthma. *Léopold-Levi and H. de Rothschild.* 413

Adrenalin, given by hypodermic injection in the dose of 10 minims of the 1:1000 solution, found in a number of cases to relax the spasm of asthma instantly. When taken by mouth, ineffectual. In one case, adrenalin injections every evening in the hay season, served to ward off hay fever and accompanying asthma. *Melland.* 476

Bromide Intoxication. TREATMENT. Sodium chloride found very effective in relieving symptoms due to bromides in epileptics. Two grams ($\frac{1}{2}$ dram) of salt taken internally three times daily will remove bromide eruptions and overcome torpid condition of patient. Washing mouth with salt solution removes foulness of breath. Gastric disturbances in bromide users relieved by taking 1 or 2 grams of salt before each meal. Saline baths also useful. Occasional re-appearance of epileptic spasms after relief of symptoms of bromism by this method may be avoided by giving chloral hydrate, 1 to 2 grams (15 to 30 grains) daily. Twenty grams of salt daily in two patients caused prompt disappearance of pustular acne and leg ulcers due to bromides. *Ulrich.* 604.

Bronchitis. TREATMENT. Menthol and eucalyptol in intramuscular injections found effective in bronchitis, gangrene of lung and many cases of pulmonary tuberculosis. Formula: Menthol, 1 part; eucalyptol, 2; castor-oil, 10. At first inject 2 c.c. (32 minims) three or four times weekly; later double strength of preparation and reduce number of injections to twice weekly. Treatment for four to eight weeks generally gives excellent results. *Berliner.* 546

Carbuncle of Face. TREATMENT. Passive hyperemia by means of band around lower part of neck used with success in carbuncles of face and on back of neck (when high enough). Use band of rubber tissue 3 centimeters broad. Mild constriction sufficient and band should be worn 20 to 22 hours daily unless œdema appears. Relieves pain; on third day purulent discharge sets in, lasting a few days. Avoid squeezing out pus. Intervention with knife unnecessary. *Keppeler.* 292

Carcinoma. TREATMENT. Quinine, stirred with water to a paste, used locally in cases of epithelioma where operation refused. Application repeated four times on alternate days. Caustic action at first exerted on ulcers, which later healed completely under simple iodoform dressing. Also useful in palliative treatment of inoperable uterine cancer. The remedy is of diagnostic value, as on ordinary erosions it does not have the destructive effect produced on cancer. *Stroné.*

Page 94

The use of high-frequency currents found valuable in treatment of malignant growths, denuded surfaces, slowly healing wounds, and tuberculosis. On epitheliomas they exert a selective cytolytic action. Infected glands disappear, and discharge becomes odorless. Current has an analgesic effect. Time of application should never exceed 10 minutes. For internal growths current is used after operation to promote cicatrization. *Rivière.*

124

Acetone used in palliative treatment of 15 cases of inoperable uterine cancer. Hardens the tissues and stops hemorrhage, septic absorption, and odor. After curetting under ether, solution of acetone is poured into the cavity through a conical speculum, contact with normal vaginal tissues being avoided. Hips elevated. Excess drained off through speculum and subsequently by tampon. When discharge begins again treatment is repeated without ether. Pain was not relieved but marked relief obtained from general infection. *Tovey.*

122

Carcinoma of Stomach. DIAGNOSIS. Danger-signal: middle age, loss of weight and strength, with perhaps some dull epigastric pain. If, in spite of six or eight weeks' careful treatment, symptoms increase in severity, loss of weight becomes more out of proportion to dyspepsia, appetite leaves, and some anemia appears, diagnosis of probable malignancy is justified and operation indicated. *Deaver.*

175

Malignant disease has been demonstrated by X-rays, through its invasion of stomach-cavity and resulting changes in peristaltic waves. *Leonard.*

178

Cellulitis with Gangrene. TREATMENT. Case of diffuse phlegmon of leg with gangrene treated successfully with: 1. Linear applications of thermocautery. 2. Subcutaneous injections of hydrogen peroxide 1 to 2 centimeters above infected area. 3. Passive hyperæmia induced thrice daily by rubber bandage above knee. 4. Daily bathing of part in warm permanganate solution. 5. Wet dressing of hydrogen peroxide. *Petit.*

173

Chancroids. TREATMENT. Cleanse lesion with gauze and water. Apply cocaine or other local anæsthetic. After five or ten minutes apply nitric acid to sore, taking care that it penetrates under the edges and into pockets. After several minutes wipe lesion dry with

blotting paper. Remove slough thoroughly with sharp curette. Paint the cleansed surface with 10 per cent. silver nitrate solution till a white pellicle has been produced. Apply wet dressing. Sore will generally heal in a few days to two weeks. *Pedersen and Marsh.*

604

Chilblains. TREATMENT. 1. Measures to allay co-existing irritative influences originating in various portions of body, as the nasopharynx, teeth, respiratory or digestive tracts, etc. 2. Gymnastic exercises of extremities at hourly intervals. Arms raised above head, with alternate flexion and extension of hands and fingers. Similar movements of lower limbs. 3. Protection from cold. 4. Kneading, after raw surface of chilblain has become covered. *Jacquet and Jourdanet.*

162

Cholecystitis. TREATMENT. Irrigation with normal saline solution, at the rate of about six drops per second and with elevation of one foot, of biliary fistulæ, after drainage of gall-bladder for cholecystitis, cholelithiasis or cholangitis: 1. Produces prompt diuresis. 2. Hastens disappearance of chronic jaundice. 3. Often relieves postoperative biliary vomiting. *McArthur.*

87

Curable by diet and hygiene or operation. Cholecystostomy usually adequate. Cholecystectomy when gall-bladder gangrenous or duct completely obstructed; should be performed several months after primary cholecystostomy. *B. Holmes.*

292

Cocaine Poisoning. TREATMENT. Administer ether by inhalation, only to the degree of mild surgical narcosis or even less. Employ a mask and give anæsthetic by drop method. Probably also valuable for poisoning by stovaine or other synthetics. *Engstad.*

414

Colitis, Chronic. TREATMENT. Rectal use of hot solution of gelatin beneficial in obstinate cases of catarrhal colitis with diarrhœa. First give enema of one pint of water at 25-28° C. (77-82° F.), and when this is evacuated, have patient rest half to three-quarter hour. Then introduce through nozzle four or five inches long 40 to 80 cubic centimeters (1½ to 2½ fluidounces) of 10-per-cent. solution of gelatin in Carlsbad water (Sprudel) at 45-52° C. (113-125° F.). Patient lies on back for two hours with warm application over abdomen. Fluid usually retained. *Aldor.*

415

Collapse from Hæmorrhage. TREATMENT. Suprarenalin or adrenalin given very slowly by intravenous method. Use 5 minims of the 1:1000 solution to a pint of warm saline solution (105° F.). In urgent cases, 10 drops may be given in 1 dram of saline solution, and repeated at intervals until heart responds. Artificial respiration hastens effects. *Sajous.*

75

Collapse in Infections. TREATMENT. Obscure collapse in infections often due to

adrenal insufficiency. As soon as asthenia and lowered blood-pressure appear, administer adrenalin solution (1:1000) or cachets of glandular extract. In children give 10 to 20 drops of 1:1000 solution daily, divided into 5 or 6 doses. *Moizard.* Page 160

Constipation. TREATMENT. Appendicostomy considered as indicated in: 1. Cases of severe atonic constipation where colon much dilated and sacculated. 2. Cases of obstructive constipation where obstruction cannot be directly dealt with, *e.g.*, where inseparable adhesions between viscera and abdominal wall. 3. Cases of congenital dilatation of the colon, as alternative to resection of bowel. Instances of favorable results from appendicostomy mentioned. *Mummery.* 415

Where hard faeces accumulated in rectum, mucous membrane excoriated, and sigmoid tender, wash out rectum and colon with several quarts of hot water containing a few drams of sodium bicarbonate, borax or boric acid, introduced slowly with patient in knee-chest position, or with hips elevated. Then inject half tumblerful of oil in rectum and leave over night. *Tyrode.* 416

Coryza. TREATMENT. Sodium salicylate causes a cold to abort if taken within 24 to 36 hours. Single dose of $7\frac{1}{2}$ grains (0.5 gram) often suffices. Taken later, it relieves symptoms and shortens attack. It is also valuable in the chronic coryza of gouty subjects. Should be taken after eating, and preferably in small doses, dissolved in half a glassful of water. *Courtade.* 174

Cystitis, Acute. TREATMENT. Collargol beneficial when used locally in this condition or in pyelitis. *Albrecht.* 234

Cystitis, Chronic. TREATMENT. 1. Where urine acid, alkaline diuretics and mineral waters; where urine alkaline, urinary antiseptics, *e.g.*, capsule containing 5 grains each of urotropin and salol. 2. Local treatment: bladder irrigations. Empty bladder, introduce soft-rubber catheter and introduce warm solution of one grain each of silver nitrate and potassium permanganate in a pint of distilled water, until bladder comfortably distended. After evacuation, repeat the process. Then inject $\frac{1}{2}$ ounce of one of silver salts, to be retained. *Christian.* 416

Delirium Tremens. TREATMENT. Veronal used in 100 cases, and all but 3 benefited. Initial dose of 1 gram (15 grains) in incipient cases, repeated in 3 hours if sleep does not follow. Sleep then usually lasts 6 to 8 hours and on waking patient is quiet and feels well. If tremor is still present, 0.5 gram ($7\frac{1}{2}$ grains) veronal may be given. The same dose every evening prevents insomnia. Where delirium is not controlled by the first 2 grams, another gram may be given 5 to 6 hours after the second dose. One case of veronal rash noted. *Möller.* 88

Diabetes. TREATMENT. Phosphoric acid preparations valuable in diabetic cachexia.

Phosphoric acid, 75 grains; acid sodium phosphate, 150 grains; distilled water, 10 ounces; one tablespoonful in water at every meal. Contraindicated where albuminuria. *Cautru.* 163

Calcium iodide used in 17 cases in doses of 5 to 15 grains three times daily, after treatment with codeine and diet had proved unsatisfactory. In all cases subjective symptoms were improved and amount of sugar in urine diminished. *H. E. Smith.* 164

X-rays projected over hepatic region cause decrease in glycosuria and rise in red blood corpuscles. In one case amount of sugar passed daily was reduced by 400 grams. Particularly effective in grave forms with emaciation and debility, less so in mild cases and those of obese type. *Ménétrier, Touraine and Mallet.* 178

Diarrhoea, Dyspeptic, of Infancy. TREATMENT. Calomel, one grain in broken doses, followed in 2 hours by castor oil, one dram. Daily irrigation of colon. If much vomiting, wash out stomach and colon, and follow by starch enema not exceeding 2 ounces. For two days give barley water, 2 fluidounces every 2 hours; for next two days, whey, 2 fluidounces every 2 hours. *Hollopeter.* 97

Digalen. This form of digitalis is not invariably free from cumulative effect, as has been claimed, but is better borne by the stomach than the galenic preparations. *Mayor.* 164

Drowning. TREATMENT. Adrenalin, 10 drops of 1:1000 solution in 1 dram of saline solution, slowly administered intravenously. Repeated at intervals until heart responds. Artificial respiration. *Sajous.* 75

Dysentery, Amoebic. TREATMENT. 1. Rest important, even using opium if required. 2. Calomel at first where patient strong, then magnesium sulphate, 1 dram every 3 hours, as long as scybala being passed. Purgatives bad, however, where initial symptoms very acute, and in late stages. 3. Ipecac, in capsules of animal membrane or salol-coated pills; 30 grains in one dose on first day, reduce by 5 grains on each succeeding day until sixth, then give 5 grains nightly for a week or 10 days longer. Patient should fast 4 hours before taking the remedy, and remain quiet afterward. 4. Colonic irrigations hardly give better results than ipecac. Best is quinine 1:5000, increased to 1:1000; next to quinine is silver nitrate. Have fluid retained 15 to 20 minutes. 5. Appendicostomy where refractory to rectal irrigations. Marked success in 2 cases, using quinine or saline solution through fistula. Perform operation in two stages: first bring base of appendix against abdominal wall, stitching meso-appendix to peritoneum; 48 hours later, apply cocaine to appendix, snip off with scissors and introduce No. 10 rubber catheter. *Anders and Rodman.* 290

Dyspepsia of Old Age. DIAGNOSIS. Of every 100 cases in persons over 65 years of

age, 66 are secondary to organic disease of some important organ (kidneys, prostate, heart, lungs, liver, pancreas, chronic gout, etc.); 34 are due to degeneration of gastric and intestinal secretory structures. *Fenwick.*

Page 24

Eclampsia. TREATMENT. Bilateral renal decapsulation employed in three dangerous cases with excellent results, after other measures had failed to bring on diuresis. *Lichtenstein.*

294

Eczema. TREATMENT. X-rays of value in subacute and chronic forms. In vesicular variety, mild applications suffice; in squamous and pustular eczema, more vigorous treatment required. Eczema of lips, ears, axillæ and anal region especially adapted for X-rays; itching relieved. Seborrhæic eczema of face also benefited. *Müller.*

239

Emissions, Nocturnal. TREATMENT. Styptol (cotarnine phthalate) found to prolong interval between emissions to from one to three weeks in all cases. Two, then three, styptol tablets of $\frac{3}{4}$ gram each administered before retiring, for a month. Fluidextract of hydrastis, 40 to 60 drops before retiring, also recommended. *J. Koenig.*

127

Epilepsy. TREATMENT. Diet low in proteids caused reduction in number of seizures by 14 per cent. Each of the three daily meals given consisted of 125 grams of bread, 16 grams of butter, and 250 cubic centimeters of milk. *Rosanoff.*

89

Exploratory trephining advised in traumatic epilepsy. Eleven cases operated, four of idiopathic and seven of surgical epilepsy. Cysts found in two instances, cicatrices in four, and œdema of pia in all. Improvement resulted in all the cases from removal of œdematous fluid. Epileptic attacks returned in four cases. *Tilmann.*

127

Epithelioma. TREATMENT. Commercial 40 per cent. formaldehyde solution applied in two cases with successful results. After three applications dead neoplastic tissues separated, leaving granulating surface, which later healed completely. Pain obviated by injections of 1 per cent. novocaine solution. No recurrence in ten months. Method suitable for comparatively small lesions without lymphatic involvement, where patient refuses operation. *Hallopeau and Fumouze.*

294

Extra-Uterine Pregnancy. TREATMENT. In first half of an ectopic pregnancy operation for removal of gestation sac is indicated wherever conditions permit. In latter half, however, patient, under favorable surroundings, should be allowed to go within two or three weeks of term before operation, meanwhile being kept under watch. Removal of placenta at operation is of cardinal importance; if this be impossible, placenta should be shut off from peritoneum by gauze. Dependent drainage through vagina should be secured. *Peterson.*

225

Felon. TREATMENT. Operation advised as soon as diagnosis made. Patient should eat a substantial meal before the operation, and remain in recumbent posture until half an hour after operation is over. After applying tincture of iodine, inject sterile 1 per cent. cocaine solution in a circle at root of finger; as much as 3 or 4 grams (45 minims or 1 dram) of solution may be used. If felon very small, inject instead around lesion itself, 1 centimeter from its margin. Five minutes later incise, irrigate with hydrogen peroxide and establish drainage. Rest of treatment includes bathing of part in warm peroxide (1 in 4) and sterile compresses of same. *Appelmann.*

167

Femur, Fracture of. TREATMENT. Combination of Buck's weight and pulley system with suspension by the Hodgen splint gave very satisfactory results. Traction can be accurately measured and maintained, transverse displacement corrected, and comfort greatly increased. After extension is applied, the supporting bands attached to splint are passed under limb, which is then swung clear of bed. Supporting bands are adjusted to make support uniform, and later, if desired, to exert coaptative pressure anteroposteriorly or laterally on the fragments. *Stimson.*

226

Fibroids, Submucous. DIAGNOSIS. Gradually increasing dysmenorrhœa and menorrhagia, with consequent anemia and "nervous debility," are typical symptoms which, in a woman of thirty years or over, should lead one to suspect this condition. In differential diagnosis, enlarged uterus from subinvolution, metritis, endometritis, and pregnancy should be considered.

TREATMENT. When submucous fibroid large and sessile: hysterectomy. Vaginal operation limited to removal of polypi, owing to importance of exploration of pelvis and abdomen where tumor of some size. Transperitoneal enucleation slightly increases operative risk, but if desired by patient in order to preserve uterus, may be performed. *Truesdale.*

225

Fibrolysin. Best given by intramuscular injection in dose of 35 minims (2.3 cubic centimeters), every other day. Desired solvent effect on local connective tissues is kept up by massage of the part. Connective tissue surrounding old infectious foci may also be affected and dormant bacilli set free; hence it is well to search for and exclude previous inflammatory disturbances in every case before using this remedy. *Stocker.*

167

Furunculosis. TREATMENT. In furunculosis, carbunculosis, acne and subcutaneous abscesses brilliant results from vaccine therapy can be expected. In chronic cases, best results when a fresh vaccine is prepared from the pus every two to four weeks. Cautiously increase dose at successive inoculations. *Thomas.*

161

Gangrene, Diabetic. TREATMENT. Currents of air heated to 150°, 300°, 500° C., or even higher, applied repeatedly, found to prevent extension of gangrene and arrest toxic absorption by producing carbonization of the part. Amputation can then be performed with greater safety. *Dieulafoy.* Page 223

Gastro-enteritis of Bottle-fed Infants. PROPHYLAXIS. 1. Certified milk or clean milk fresh from cow; if neither available, Pasteurization. 2. Fresh air. 3. Avoid overheated rooms. In hot weather child should be placed out-of-doors at night on properly screened porch. 4. Avoid overfeeding by giving boiled water to drink. 5. Light clothing and frequent cool bathing. 6. Destroy flies.

TREATMENT. 1. Withhold food for three days; then give barley-water. 2. Have child rest quietly in bed out-of-doors. 3. Wash stomach with boiled water at 100° to 110° F., with a little lime-water added. Before withdrawing tube introduce 2 drams of castor-oil and give thorough colonic irrigation. In cases seen later stomach washing not indicated unless gastric irritability present. After stomach settled give cool boiled water freely by mouth. 4. Colonic irrigations every 4 hours on first day, and later twice daily. Nutrient enemata every 4 hours, following irrigations. Be cautious with cathartics. 5. Tub-bath, lasting 10 to 20 minutes, to control temperature and restlessness. 6. Drugs: Bismuth subnitrate, 1 to 2 drams daily, in a child of one year. Salol, 1 to 2 grains every 3 hours. Opium where pain and continued frequent stools. Brandy in boiled water where prostration; ½ ounce in 24 hours. *Hulse.* 295

Glycosuria. TREATMENT. Glycosuria in elderly persons often results from only a certain few carbohydrates used in excess, especially cane-sugar and wheat-starch. Management consists in ascertaining the harmful ones and removing them from diet. Cut off all carbohydrates for a week, and if glycosuria disappears try oatmeal, at first with water containing saccharin or with butter, later with rich cream. Then try potatoes, peas, beans, etc., one by one, examining urine frequently. Open-air treatment of great value. *Vaughan.* 296

Goiter, Exophthalmic. ETIOLOGY. Acute rheumatism occupies an important place among infections which lead to development of Graves's disease. *Souques.* 165

TREATMENT. Previous to operative intervention: 1. Rest cure interrupted by systematic exercises. 2. Sojourn at some resort having elevation of 1000 to 1500 meters (3300 to 4900 feet). 3. Diet poor in albumin and fats. 4. Cool baths and lotions. 5. Internally, phosphorus, arsenic, and iron. Avoid measures producing rise in blood-pressure, as well as active diuretics. *A. Kocher.* 417

Case under observation for one year showed continued improvement under treatment with

dried powdered thymus, 30 to 120 grains three or four times daily. *Gwyer.* 424

TREATMENT. Intravenous injections of iodine and arsenic recommended. Two c.c. (32 minims) of following solution to be injected repeatedly: Atoxyl, 1 gram (16 grains); iodide of sodium, 4 grams (64 grains); distilled water, 20 c.c. (5 drams). *F. Mendel.* 542

Gonorrhœa. TREATMENT. Vaccine therapy caused marked improvement or cure in subacute and chronic cases. Functional results good. *Thomas.* 161

Hæmophilia Neonatorum. TREATMENT. Injections of fresh normal human blood-serum employed with signal success in 12 cases of "bleeding babies." Hæmorrhages arrested and loss of weight checked. Blood for injection is collected from a vein at the elbow by suction into a flask through a sterile aspirating needle of No. 19 caliber; it is allowed to coagulate with the flask in a slanting position, and the serum withdrawn for use as it separates. In cases of moderate severity, at least 10 cubic centimeters of serum should be injected, and at first repeated three times daily. In severe cases, serum to be given every two hours, and in larger amounts if necessary. *Welch.* 607

Hæmorrhage. TREATMENT. Adrenal preparations valuable in capillary hæmorrhage from pharyngeal, œsophageal, gastric or intestinal mucous membranes. Mastication of tablets of adrenal substance, or ingestion of 5-grain capsules of same, causes vaso-constriction. *Sajous.* 75

Artificial gelatin made by combining gum arabic with perchloride of iron, then sterilizing the whole, very efficient when injected hypodermically, increasing coagulability of blood more actively than calcium chloride. *Ciuffini.* 292

Hæmorrhage in Bladder Operations. PROPHYLAXIS. About fifteen minutes before operation tie off all four extremities close to the axillæ and inguinal regions with gauze bandages. When skin of extremities begins to turn blue start operation, which will be remarkably dry. Useful for prostatectomy or removal of bladder tumor. No untoward effects. Less anæsthetic is required in operation, and healing of wound seems to be accelerated. *Kolischer and Kraus.* 418

Hæmorrhoids. TREATMENT. In 3 cases of bleeding hæmorrhoids treatment by thymus, 30 to 120 grains of fresh dried gland, three or four times daily, caused great diminution or cessation of hæmorrhages, and improved state of blood. *Gwyer.* 424

Hæmorrhoids often due to proctitis. Where this is the case: 1. Arrest fermentation and overacidity with intestinal antiseptics and alkalies. 2. Prohibit rich foods, and restrict carbohydrates to relieve liver. 3. Prohibit stimulants. 4. Encourage exercise or rest as indicated. 5. Irrigate rectum daily for a

week with a gallon or more of water at 110° F., each irrigation lasting fifteen minutes. In presence of subacute or chronic proctitis, follow this by injection every second or third day of a weak solution of a silver salt, or else prescribe a suppository or ointment containing ichthyol or iodoform, tannic acid, adrenalin or hamamelis, and belladonna or stramonium. *Bocklin.* Page 543

Hammer Toe. TREATMENT, OPERATIVE. Apply Esmarch bandage. Incision $1\frac{1}{4}$ inches long at outer aspect of plantar surface of toe, with center at flexed joint. Dissect skin flaps laterally and continue incision through subcutaneous structures, avoiding artery and nerve. Dissect flexor sheath free from joint, hold it aside, and remove articulating joint surfaces with chisel. Allow subcutaneous structures to fall back in place, hold them by a few fine buried catgut sutures, close skin incision, and dress. Apply plaster-of-Paris bandage fixing toes in hyperextension, making flexor tendons tense, and holding bony surfaces in apposition. After ten days split plaster bandage, and expose field of operation. Then restore dressings and keep in original position for six weeks. *Soule.* 352

Heart, Dilatation of. TREATMENT. In asthenic cardiac disorders with dilated right ventricle, dyspnoea and possibly cyanosis and oedema, the adrenal principle improves oxidation and metabolism in the cardiovascular muscles and tissues at large. Tablets of $\frac{1}{2}$ to 2 grains of desiccated gland after meals. *Sajous.* 75

Heart, Neuroses of. TREATMENT. In cardiac irritability: 1. Caffeine citrate and tincture of strophanthus, both best given in tablet-triturate, are promptly effective. Caffeine relieves headache and vertigo when present. Cactus useful in some cases; acts more slowly. 2. Local applications, as cologne, spirits of camphor, ammonia. 3. Light and easily assimilable diet. Avoid meats. 4. Quiet and rest for weeks at a time. 5. Nerve tonic: combined glycerophosphates of lime and soda, gr. v-x t.i.d. after meals. 6. Where gastric or intestinal intolerance: milk of bismuth or lactobacilline tablets. 7. To promote sleep: gentle massage of lower limbs before retiring. If hypnotic required, bromural, gr. v-x. *Beverley Robinson.* 163

Hernia. TREATMENT. A truss never cures a hernia in adult life, and rarely during childhood. Losses from disability due to hernia avoided only by early radical operation. *A. C. Wood.* 20

Hyperchlorhydria. DIAGNOSIS. Excess of free HCl alone does not warrant a diagnosis of primary hyperchlorhydria, which shows variable symptoms, both gastro-intestinal and nervous. Though 31.6 per cent. had lost weight, the appetite was generally good and examination of the gastric contents and faeces showed that digestive power was but little

impaired. The nervous manifestations included periods of depression and mental confusion, irritability, various phobias, numbness, paræsthesias, and attacks of faintness. Male sex and constant mental strain seemed to be predisposing factors. *G. M. Piersol.* 65

TREATMENT. Aluminium silicate in the form of neutralon found effective in all cases of gastric hyperacidity or hypersecretion, whether of neurotic or organic origin,—especially where persistent hypersecretion with motor insufficiency. It reduced acidity, relieved pain and aided digestion. Acts as a protective and astringent to mucosa. Dose, $\frac{1}{2}$ to 1 dram in 3 ounces of water, $\frac{1}{2}$ to 1 hour before meals. *Rosenheim and Ehrmann.* 352

Ileus, Paralytic. TREATMENT. Atropine found valuable in 8 cases. Inject 1 milligram ($\frac{1}{64}$ grain) hypodermically and follow shortly after by a stronger dose of 3 to 5 milligrams ($\frac{1}{32}$ to $\frac{1}{12}$ grain). Improvement and abundant faecal discharge within ten hours. *Lederer.* 229

Infant Feeding. Salts of cow's milk sometimes cause tendency to convulsions; treat by temporary salt-free diet. Sugar intoxication or intolerance of fats may likewise exist; treat by elimination of these from diet. *Neff.* 24

Insomnia. TREATMENT. Pituitary preparations especially indicated when there are low blood-pressure, general weakness and chilliness, and patient is quiet. Dried pituitary extract, in doses of 0.20 to 0.40 gram (3 to 6 grains), taken an hour or less before retiring, found promptly effective. Best used intermittently, since action fugacious. When it is found that hypnotic effect is being lost, small doses of trional or veronal may be given to sustain it. *Sardou.* 545

Intestinal Protein Indigestion. TREATMENT, DIETETIC. Cut proteids to a minimum, give chiefly cereals and other starches, and supply assimilable fats guardedly. A little lean meat or milk, or vegetables rich in protein may, however, be allowed to avoid loss of weight. Gelatin, junket, whey, and buttermilk often valuable. Fermented milks especially useful when stomach also deranged and in gout and arteriosclerosis. Where hyperacidity and spasmodic pain prominent, give hot olive-oil. Forbid tea, coffee, and alcohol, and encourage drinking of distilled water. MEDICINAL. 1. Cleanse bowel at once with calomel or calomel and podophyllin, followed by a saline. To keep bowel clean, use phenolphthalein in tablet form or as syrup; one or two tablets every night sufficient, and later to be reduced in frequency. Foods like shredded wheat, also systematic deep breathing, will assist drugs. 2. Bile-salts, as cholagogue and to relieve such symptoms as offensive breath, coated tongue, etc. 3. Ferments, kept up several months. Alkalies where fat not well digested. 4. Intestinal antiseptics, as salol, naphthalene tetrachloride, some guaiacols,

creosote, sulphocarbols, or agar soaked in hydrogen peroxide and flavored. 5. Where hyperchlorhydria, give eumydrin ($\frac{1}{85}$ grain or 0.001 gram t. i. d.), combined with sodium citrate. Where deficient gastric secretion, try suprarenal extract, or the old and well-known measures. 6. Tonics, especially at outset, avoiding strychnine. *Thayer and Turck.*

Page 418

Intussusception. TREATMENT. Lateral anastomosis performed in 2 acute cases and advocated in preference to resection because of its comparative simplicity and safety. Tumor was found to disappear subsequent to operation. Not applicable, however, to gangrenous cases. *Parry.* 125

Iodine. As skin disinfectant. Some hours before operation field is shaved dry and painted with 10 or 12 per cent. tincture of iodine. Dry sterile dressing. Painting repeated on operating table. Author shaves and thoroughly cleanses skin 12 hours before iodine applied. Primary union in every case. *Jewett.* 63

Larynx, Fracture of. TREATMENT. Cases divided into three groups according to indications for tracheotomy: 1. Mild cases; fracture often incomplete and detected only on careful palpation. Keep patient under close watch. 2. Serious cases; marked dyspnoea, sometimes hæmoptysis. Immediate tracheotomy indicated. 3. Cases of intermediate severity. Preventive tracheotomy should be practised whenever patient cannot be kept constantly under watch. *Michel.* 351

Leprosy. TREATMENT. Oil of chaulmoogra is best given as a saponified preparation, in keratin-coated pills; the purified oil can also be injected in doses of 1 gram three times a week. Nastin injected in doses of 1 cubic centimeter gave good results. Great persistence in treatment, even after relief of symptoms, found advisable. Local treatment by resorcin, hydrogen peroxide, ichthyol, thiosinamine, etc., and baths, also useful. *Kupffer.* 169

Leukæmia. TREATMENT. In leukæmia of essentially splenic type, Roentgen ray treatment, skillfully employed, is the most prompt and certain means of reducing leucocytosis, bettering anæmia and improving general health. Iron and arsenic still believed to have a place in the treatment. *Wilcox.* 387

Lupus Erythematosus. TREATMENT. Constitutional: regulation of diet to avoid overloading intestine; coffee or tea contra-indicated; quinine often useful. Local: in hyperæmic stage, cooling lotions and ointment of subacetate of lead, ichthyol lotion or ointment; in chronic cases, strong solution of ichthyol or iodine liniment; in severe conditions, linear scarification or light touches of thermocautery. High-frequency currents in subacute cases, Finsen light, X-rays or radium in chronic cases; particularly useful where thickening of the integument. *Morris.* 63

Malarial Fever. TREATMENT. Following measures found best in treatment of tropical malaria: In mild æstivo-autumnal infections, give 3 grains of calomel on admission, with 20 grains of quinine in solution or capsules. Follow calomel by salts next morning. Give 10 grains of quinine t. i. d. for a week, then reduce dosage to 5 or 10 grains per day. To relieve headache, ice-cap. On discharge patient is advised to take 10 or 15 grains of quinine once a week for a few weeks. In severe æstivo-autumnal infections, nausea and vomiting prevent administration of quinine by mouth; therefore give it hypodermically: Make skin of buttock surgically clean, boil needle and syringe but not quinine solution; plunge needle deeply into muscle at right angles to skin, and inject slowly. Close puncture wound with collodion. Abscesses very rare. Give 15 grains of quinine, hypodermically, every four hours up to 75 grains, or until vomiting has ceased. Sometimes after first or second injection all symptoms are relieved; stop injections and give 10 grains t. i. d. in solution or capsule. Tablets often not absorbed. *Shook.* 336

Meningitis. TREATMENT. Early relief from excessive intracranial pressure by means of lumbar puncture advocated in treatment of uncomplicated cases of all forms of meningitis, including tuberculous. Earliest possible recognition of pressure symptoms required, for which purpose total and differential leucocyte counts are of value. Four cases of meningitis reported (including one tuberculous), which recovered after lumbar puncture. *Hultgen.* 298

Meningitis, Cerebrospinal. TREATMENT. Case of an infant two months old reported, in which tapping of lateral ventricles and intraventricular injections of antimeningococcus serum led to complete recovery. *Fischer.* 129

Metrorrhagia. TREATMENT. Excessive menstrual discharge in young girls, due to blood changes, often arrested by following: Subcarbonate of iron, 0.10 gram ($1\frac{1}{2}$ grains); ergot (Bonjean), 0.05 gram ($\frac{1}{4}$ grain); quinine hydrobromide, 0.01 gram ($\frac{1}{16}$ grain); extract of belladonna, 0.005 gram ($\frac{1}{2}$ grain); two pills before meals. *Huchard and Fiesinger.* 298

Myasthenia Gastrica. TREATMENT. 1. Remove causative factors, as excesses or nerve-strain, if these are evident. 2. Exercise, either out-of-doors, or as special movements to strengthen abdominal muscles. Follow morning exercises with cold shower bath or plunge. 3. Rest in bed for a week, where muscular relaxation marked. If this not possible, use some form of abdominal support, as by Rose's belt of adhesive plaster, to be worn two weeks. 4. Gastric lavage with cool saline solution, not exceeding eight ounces. 5. Mixed diet, consisting of carbohydrates in the form of cereals, toast, rolls and crackers, and vegetables; proteids, as meats,

eggs and milk; fats, as butter. Cooked fruits and a little ripe raw fruit allowable. Interdict sweets, and limit fluid intake to 6 ounces with each meal. Avoid overloading stomach at any given time; allowing three light supplementary meals daily, if necessary to secure this end. Patient should lie down for one hour after meals. In severe cases, rectal feeding for a few days. 6. Drugs. The best are strychnine phosphate, gr. $\frac{1}{30}$, extract of ergot, gr. j, extract of coca, gr. ij, extract of physostigma, gr. $\frac{1}{4}$, and hydrastin hydrochlorate, gr. $\frac{1}{4}$, taken fifteen minutes before meals. *Chace.* Page 356

Nævus. TREATMENT. Small, red, arterial nævi respond well to radium. Large, superficial, purple, capillary nævi indicate use of mercury quartz lamp. Mixed nævi of moderate size should be treated by both methods. Give not more than two or three exposures with radium, nor more than four or five with lamp. Time of application not to exceed one hour. Results better than with X-rays. *Kromayer.* 420

Nausea, Postanæsthetic. TREATMENT. Olive oil given by mouth in thirty cases of ether anæsthesia, after partial restoration of consciousness. In only one patient was nausea observed after its use. Where nausea had already begun it was at once checked by administration of the oil. *Graham.* 91

Nephritis, Acute. SURGICAL TREATMENT. Case of severe acute nephritis in a man 25 years of age, with no urine passed for 5 days, saved by decapsulation of both kidneys (Edebohl's operation). A few hours after operation both kidneys resumed function. *Karo.* 43

Nephritis in Childhood. TREATMENT. 1. Diet. For two days prohibit all food, giving only 500 or 600 grams (1 pint or 20 ounces) of water, sweetened with table- or milk-sugar, daily. Then give 500 grams of milk and same amount of water. When condition becomes subacute, add carbohydrates, as preparations of flour, potatoes, etc. Add sugar to milk; when distasteful, dilute milk with Vichy, or give it alternately raw and boiled. Where milk diet not tolerated or results poor, try salt-free diet, omitting proteids and limiting milk to small amounts. Later, if no complications, lean ham, fresh pork, lamb and chicken may be given. Milk should not be taken with meals. 2. Rest in bed and avoidance of exposure. 3. Stimulate skin by general rubbings, gentle massage and tepid baths. Hot pack. 4. Dry cupping, wet cupping, or leeching over triangle of Petit. 5. Systematic disinfection of mouth, nasal fossæ and pharynx, and treatment of skin lesions as possible portals of infection. Where excretory insufficiency appears: 6. Hot air or vapor baths. 7. Drastic purgative, followed by laxative. When signs of intoxication appear: 8. Theobromine, 0.5 gram, at most 0.75 gram ($7\frac{1}{2}$ or $11\frac{1}{2}$ grains) at a dose in child of 10 to 13 years. Powdered

squill, digitalis and scammony, 0.025 gram ($\frac{3}{8}$ grain) of each in a pill, given 2 or 3 times daily. If circulation weakens, digitalin or infusion of digitalis. Convallaria or convallamarin. Sparteine in the dose of 0.04 or 0.05 gram ($\frac{3}{4}$ or $\frac{1}{2}$ grain) in the 24 hours. *Hutinel.* 357

Nephritis, Chronic Interstitial. TREATMENT. 1. Diet. Fairly full diet combined with free elimination usually gives best results. A little meat with short fiber (as mutton, chicken) may be allowed at noon, and in morning or evening some fish; vegetable food, preferably farinaceous; milk freely; stimulants prohibited. Urine and general condition of patient should be watched in relation to diet. 2. Hygiene. Freedom from anxiety and overwork; moderate exercise; warm, dry and equable climate. 3. Physical measures. Free sudation by hot-air baths, vapor baths, or hydrotherapy, carefully avoiding renal congestion. 4. Drug therapy. Sodium iodide, gr. xv-xxx; sodium phosphate, gr. xxx-xlv; sodium chloride, gr. xc; water, Oij; to be taken freely as a drink. Purgatives. Where marked anæmia: Basham's mixture or triple arsenates with nuclein. In failing compensation: digitalin combined with a vasodilator, as one of the nitrites (at first in small doses). Veratrine (0.5 milligrams or gr. $\frac{1}{32}$ every half hour until pulse relaxed) is a safe and effective vasodilator for continued use. In bad cases opium in small doses (2 to 4 minims of deodorized tincture) strengthens heart and dilates arterioles. When complications occur, stimulants, diuretics, purgatives and diaphoretics may be indicated. In dyspnoea, quebrachine hydrochlorate or aspidospermine valuable. *Butler.* 171

Neuralgia. TREATMENT. One to two grains of 1 : 1000 adrenalin ointment applied to skin over affected area in neuralgia and neuritis produces ischemia of the hyperæmic nerves and thus arrests pain. *Sajous.* 76

Neuritis, Multiple. TREATMENT. Subcutaneous injections of arsenic caused marked improvement or cure in 5 cases. Formula used: Sodium cacodylate, 1.5 grams (23 grains); cocaine hydrochloride, 0.1 gram ($1\frac{1}{2}$ grains); liquid phenol, 3 drops; distilled water *ad* 50 grams ($1\frac{1}{2}$ ounces). Began with 0.4 cubic centimeter (7 minims), dose injected being increased by 0.1 cubic centimeter ($1\frac{1}{2}$ minims) daily until 2.0 cubic centimeters (32 minims) reached; this amount continued for two weeks, then reduced gradually to 0.4 cubic centimeter. *Willige.* 421

Noma. ETIOLOGY. Ulcerative stomatitis offers a good soil for development of noma. A streptothrix is regularly present in noma, showing thick mycelium at edge of lesion with fine rods and spirilla extending into adjacent tissues. This organism is probably direct cause of noma. It is present already in the pregangrenous stage.

TREATMENT. Radical treatment is to be practised in pregangrenous stage; thorough use of actual cautery over ulcer and adjoining tissue. When ulcer spreads, best results are obtained by conservative measures: applications of hydrogen peroxide, pure alcohol, and potassium chlorate. General anaesthesia contraindicated because of danger of pulmonary infection; cauterization or removal of specimens can be done painlessly. *Neuhof.*

Page 421

Obesity. **TREATMENT.** Strict vegetable diet for 4 to 6 weeks, then 150 to 200 grams of lean boiled meat 3 times a week or once daily. This diet kept up for months, and tends to protect from returning corpulence. If weight begins to increase, drop meat again for 4 to 6 weeks. Such diet best corrects obese tendencies without impairing general health. Supplement by exercises and hydrotherapeutic measures. *Albu.*

25

Osteomalacia. **TREATMENT.** In a case of non-puerperal osteomalacia, after two years in bed and failure of all other measures, suprarenal extract given according to Bossi's technique. From 8 to 10 injections of 1 cubic centimeter made each month. By the thirtieth injection great improvement was manifest, and in time the entire syndrome arrested, with almost complete restoration of function. *Bernard.*

92

Otitis Media, Chronic. **TREATMENT.** Perhydrol in 2 to 6 per cent. solution found useful. Patient drops solution into ear and remains on side for 10 minutes; auricle is then dried and cotton inserted in meatus. Where much suppuration, repeat morning and evening. Inspissated pus is dislodged, and cholesteatoma also yields. *Breagen.*

125

In late stages:—If tube diseased: inflation, with bougieing if stenosis exists. Intratympanic injections of menthol oil, iodine solutions, pilocarpine, menthol giving best results. Where fixation of the ossicles: pneumo-massage; injection of fibrolysin sometimes valuable. Operative measures: mobilization of the malleus, synechotomy and tenotomy of the tensor tympani, eventual excision of the malleus and incus. *Yearsley.*

61

Case of subacute otitis media, complicated by suppuration of ethmoid sinus, in which hexamethylenamin (5 grains t. i. d.) caused rapid and marked improvement. *E. J. Brown.*

353

Pelvic Inflammation. **TREATMENT.** Abscess. Simple vaginal incision with drainage; if condition becomes worse, abdominal section, by extraperitoneal method if possible, should be attempted. *Esch.*

62

Hot mud compresses over abdomen recommended in chronic exudative adnexal inflammations and pelvic exudates. The heat is much better borne than in hot-water applications, and 10° C. greater heat can be applied. If surface be covered with woolen cloths, heat retained for several hours. Causes hyperæmia and promotes removal of

exudate. Contraindicated in acute cases. *Cukor.*

63

Pemphigus. **TREATMENT.** Quinine in large doses used in two severe cases with pronounced benefit. One patient was given 23 grains daily for two weeks, then 31 grains daily. No tinnitus, vertigo or vomiting resulted. *Bergrath.*

230

Pericarditis. **ETIOLOGY.** Myocardial degeneration, leading to dilatation, predisposes to pericarditis. Overaction of heart may induce pericardial inflammation. Chronic adhesive pericarditis frequent but often impossible of diagnosis, serious symptoms arising only when myocardium itself is diseased. *Brooks and Lippencott.*

26

Peritonitis. **PROGNOSIS.** Degree of improvement in circulation caused by intravenous saline infusion is an index of the extent of vasomotor paralysis, the effect persisting in proportion to recuperative power of vessels. If infusion causes no circulatory improvement little benefit can be anticipated from operation. *Lichtenberg.*

126

TREATMENT. Restrict the amount of tamponing and never insert a tampon between loops of intestine. Fowler position always exerts favorable influence. *Dege.*

64

Measures recommended for inhibition of peritonitis: 1. Gastric lavage immediately, where nausea, vomiting or gaseous distention (except where peritonitis follows perforation of stomach or duodenum). 2. Rectal instillation of normal saline by drop method, continuing for 1 to 2 hours, then interrupting for 2 hours. Where this method not practicable, give 500 to 1000 cubic centimeters of saline solution subcutaneously, repeating as required to relieve thirst and keep vessels filled. 3. Fowler position. 4. Large, hot, moist dressing of saturated boric acid solution and alcohol in equal parts applied to abdomen. 5. Give no cathartics or food by mouth; even prohibit water till patient on way to recovery. Feed by enemata consisting of 1 ounce of concentrated liquid food in 3 ounces of normal saline; add 10 to 50 drops of deodorized tincture of opium to each feeding till no longer painful. Administer slowly every 3 or 4 hours through rubber catheter introduced not more than 3 inches. *A. J. Ochsner.*

360

Two cases of diffuse suppurative peritonitis treated, after operation, by means of Fowler posture and colonic irrigation by way of cæcum, with recovery. Appendix amputated, catheter introduced into cæcum through its stump and secured by purse-string suture. One to 1½ pints of saline solution run in every two hours. Free liquid fecal evacuations secured through the catheter, and should be continued till free evacuations by rectum re-established. Avoids intestinal paresis from gas retention, and promptly relieves toxæmia. Predigested foods may be administered through cæcum with certainty of their being absorbed. *Allaben.*

547

Peritonitis, Tuberculous. TREATMENT. Air injected in peritoneal cavity after paracentesis in three cases of the exudative type, with recovery. After removal of exudate by trocar, air is forced in by emptying water from a large syringe into the aspirator jar. *Florio.* Page 238

Placenta, Premature Detachment of Normally Situated. TREATMENT. Rupture of membranes and rapid delivery not to be done till uterus contracting, patient rallied, and os somewhat dilated. Where no contractions, no dilatation, and patient in collapse, use tampon and binder until patient and uterus have recovered. This enables uterus to withstand pressure of blood within it and so controls hæmorrhage. *Goldstine.* 300

Pleural and other Effusions. TREATMENT. To prevent recurrence, after aspiration, of serous effusions into the pleura, peritoneum, tunica vaginalis, etc., 8 minims to 2 drams (according to size of cavity) of suprarenalin or adrenalin in four times the quantity of saline solution may be injected into the cavity. *Sajous.* 76

Strong galvanic currents employed in serous effusions, using as positive electrode a cotton wad soaked in 10 per cent. sodium bicarbonate solution and as negative electrode one soaked in 5 per cent. tartaric acid. Daily applications of one hour, with current of 15 or 20 milliamperes, gradually and cautiously increased up to 50 or 60. Fluid promptly reabsorbed in many cases of peritoneal, pleuritic and even pericardial effusion. *De Renzi.* 234

Pneumonia. TREATMENT. Venesection recommended in cases with signs of progressive dilatation of right heart, even where patient far from robust. Always gives some relief and is often followed by recovery if done before right heart too greatly distended. If full stream of blood can be obtained, 6 to 10 ounces will suffice, and bleeding may be repeated in thirty-six to forty-eight hours if necessary. If stream small, little good results, because tension lowered too slowly. *McPhedran.* 332

Poliomyelitis, Epidemic. PROPHYLAXIS. Nasal and buccal secretions should be disinfected. *Fleener and Lewis.* 231

Puerperal Infection. LOCAL TREATMENT. In ulcerative endometritis, vaginal douching and drainage of uterine cavity. Where retained material with normal temperature, or where serious hæmorrhage, prompt evacuation of uterine cavity. Where moderate fever and general condition good, delay interference a few days to a week, awaiting spontaneous evacuation. Where high fever or severe toxic symptoms, especially if virulent streptococci in vaginal discharges, curet. If symptoms of extra-uterine infection, strictly avoid curettage (unless serious hæmorrhage). Curettage, where indicated, best done with finger. *Winter.* 300

GENERAL TREATMENT. Apparently hopeless case of post-partum streptococæmia saved by hypodermic injections of normal blood-serum. Initial dose, 20 cubic centimeters; on subsequent three days, 10 cubic centimeters each. *Welch.* 608

Pyelitis in Infants. DIAGNOSIS. Of 9 cases in children ranging in age from 9 months to 2½ years, 6 had high fever; 5, frequent micturition; 3, chills; 1, pain, and 1, tenderness in lumbar region. None vomited. Diagnosis depends on urinary findings; pus, epithelial cells, occasionally blood-corpuscles, and no casts.

TREATMENT. Urotropin, ½ to ¾ grain every two hours, very effective. *Gray.* 174

Pyloric Spasm of Infants. TREATMENT. High rectal instillations of Ringer's fluid (sodium chloride, 7.5 grams; potassium chloride, 0.42 gram; calcium chloride, 0.24 gram; boiled water, 1 liter) gave good results. Half a liter of solution is introduced in 2 hours, and the procedure repeated morning and evening. Vomiting ceases after a few days' treatment. *Rosenstern.* 232

Pyloric Stenosis, Congenital. TREATMENT. Fat-free feedings advocated, vomiting and hyperperistalsis having thereby been caused to subside in 2 cases. First give a tapioca preparation, alternating with a suspension of flour in water; then give latter alone. Flour employed to contain not over 5 per cent. fat. Add occasional nutrient enemata of albumose and sugar to keep up infant's weight. After several days return to normal amount of food—more or less gradually, according to severity of case. *Nolf.* 424

Radium. Permanent radium emanations can be established in certain organs, the blood, or the whole body, at will, by injecting finely divided radium sulphate suspended in saline solution isotonic with blood. Therapeutic results obtained: 1. Relief of pain in malignant growths, deep infections, tuberculous meningitis, etc. 2. Diminished inflammatory œdema around malignant growths, tuberculous lesions, infected glands, etc. 3. Occasionally general improvement in tuberculous patients. 4. Retrogression of benign growths, as keloids. *Dominici.* 361

Rheumatic Heart Disease. DIAGNOSIS in children. 1. Subcutaneous nodules generally indicate active cardiac disease. 2. Evening fever without previous cause suggests fresh cardiac inflammation. 3. Joint pains. 4. Sudden appearance or increase in anæmia. 5. Persistently frequent pulse. *Carr.* 26

Rheumatism. DIAGNOSIS. Enlargement of thyroid gland claimed to be a diagnostic sign of rheumatism in children. Whenever it is present in childhood, presence of rheumatism should be inquired into. *Clemens.* 482

Scurvy, Infantile. TREATMENT. 1. Orange-juice, 1 tablespoonful or more every

two hours; grape-juice and lemon-juice less valuable. 2. Feed child on uncooked or freshly boiled milk. 3. Plenty of water to drink. 4. Rest; avoid handling the child. 5. Fresh air. 6. Mashed potatoes or potato soup (Comby, Still); fresh brewers' yeast (Baginsky); sodium lactate (Wright). 7. Iron, arsenic and cod-liver oil late in disease where marked anæmia or exhaustion. *Ostheimer.* Page 545

Septicæmia. TREATMENT. In the presence of persistently low blood-pressure, hypothermia, and cyanosis, adrenalin is valuable when very slowly administered intravenously in the proportion of 5 minims of the 1 : 1000 solution to a pint of warm saline solution (105° F.). It enhances pulmonary and tissue respiration and the activity of the immunizing process. *Sajous.* 75

Collargol found valuable in septicæmia and pyæmia of medium gravity, as well as in obstinate febrile states due to reabsorption of toxins and associated with anæmia. Should be given in all cases of puerperal infection. It is best administered by slow intravenous injection of 1 to 2 c.c. of a 5 or 10 per cent. suspension. Probably acts as a catalytic, accelerating oxidation. *Albrecht.* 234

Shock. TREATMENT. Suprarenalin or adrenalin, very slowly administered intravenously; 5 minims of the 1 : 1000 solution to the pint of warm saline solution (105° F.). In urgent cases, 10 drops may be given in 1 dram of saline solution. Artificial respiration hastens effects. *Sajous.* 75

Shock, Postoperative. PROPHYLAXIS. Pituitary extract (1 cubic centimeter of 20-per-cent. solution of posterior lobe) was injected in three cases before complete recovery from the anæsthetic, in conjunction with normal saline by rectum. The pulse, previously barely perceptible, almost at once became large and bounding, slow, and regular, effect lasting 12 to 16 hours. *Wray.* 93

TREATMENT. In shock after abdominal operations, remove two skin-sutures near navel and insert glass tube joined by rubber tubing to receptacle containing saline solution at 112° F. Pass the tube upward beneath omentum and transverse mesocolon to region of solar plexus, and run in one pint of hot saline, causing rise of blood-pressure by heat and pressure stimulation of sympathetic system. Remove tube, cover wound with gauze, and apply binder to sustain pressure. Inject 10 ounces of hot saline in rectum every 2 hours. *Hopkins.* 159

Sinus Disease. TREATMENT. Case of chronic suppuration of antrum in which the discharge and subjective symptoms were greatly relieved by 5-grain doses of hexamethylenamin three times daily. *E. J. Brown.* 353

Skin Growths and Ulcerations. TREATMENT. Powdered potassium permanganate

used as a caustic for benign and malignant neoplasms, lupus, keloids, chancroids, cavernous angiomas, etc. Surrounding healthy skin is protected by rings of adhesive plaster piled one over the other, with central opening slightly larger than area to be cauterized. Powdered permanganate is then poured in and covered over with adhesive. After 48 hours, a softened mass alone remains of the growth. Upon removing this a sharply-defined depression is revealed, which heals rapidly. The procedure is usually painless. *Finck.* 232

Suprarenin. Poisonous dose varies with the individual. Danger arises from: 1. Concentration of solution used. Large amount of a weak solution is without danger. 2. Method of introduction. Intravenous injection gives immediate bad effect; locally or subcutaneously it is well borne. Author employs solution of 0.64 gram suprarenin borate in 100 cubic centimeters of 0.5 per cent. novocaine, made up fresh from tablets for each operation; 125 cubic centimeters of such solution used without danger. *Braun.* 127

Syphilis. TREATMENT. Mercuriol found useful to alternate with the protiodide and in cases where the ordinary preparations of mercury cannot be assimilated; gr. j three or four times daily. Author advocates course of twenty inunctions of the official ung. hydrarg. at the outset of every case of syphilis, before beginning internal administration. Where latter causes serious gastro-intestinal disturbance, and the symptoms of the disease are marked, inunction treatment is to be adopted. Course of three weeks of inunctions in the spring and fall for four or five years recommended. In cases of ulcerating tubercular syphilodermata and gummata best results obtained using potassium iodide (gr. x-xx t.i.d.) along with mercurial inunctions twice daily. Mercury is as valuable in tertiary as in secondary syphilis. *Christian.* 45

Syphilis curable in a month when seen within twenty days after infection. Disease abruptly checked and apparently entirely eradicated, in a series of 41 cases, by following method: As soon as diagnosis made by finding spirochæta pallida in scrapings from lesion, inject latter daily with a neutral preparation of hectine (0.20 grams; 3 grains) or with cyanide of mercury (0.0025 to 0.0050 grams; $\frac{1}{4}$ to $\frac{1}{2}$ grain). Hectargyre, which contains 0.10 gram ($1\frac{1}{2}$ grains) of hectine to 0.002 gram ($\frac{1}{30}$ grain) of cyanide may also be used. In addition, give general treatment in form of subcutaneous injections of benzoate of mercury and potassium iodide. Continue treatment for thirty days, though twenty days may prove sufficient. *Hallepeau.* 616

Tabes. TREATMENT. Strychnine in gradually increasing doses arrested progress of the condition in almost all cases. Begin with $\frac{1}{30}$ grain t.i.d., increase to $\frac{1}{20}$ at end of first week, to $\frac{1}{16}$ at end of second, then add one drop of a solution of 1 grain of strychnine in

1 ounce of water. Increase by a drop every day till total dose is $\frac{1}{2}$ grain *t.i.d.*, which is maintained for 3 months. Then increase as before until $\frac{3}{8}$ is reached, maintain for 3 months, etc. Maximum dose of $\frac{1}{2}$ grain being reached, it is maintained for a year, then gradually reduced. Results obtained: pains disappeared, bladder and bowel control regained, locomotion much improved; general amelioration. *Hammond.* Page 236

Tetanus. PROPHYLAXIS. While 1500 units of antitoxin will prevent tetanus in wounds without severe mixed infection, it may fail when used only once when there is mixed infection lasting over 10 days. In such cases antitoxin should be repeated every week while infection lasts. *Rowan.* 364

Tetany. TREATMENT. Infundibular extract (20 per cent.) of Burroughs, Wellcome & Co., recommended; given by intramuscular injection in doses of 7 drops *t.i.d.*, or oftener. If used subcutaneously it might cause necrosis of skin by vasoconstriction. Not poisonous. *Ott and Scott.* 99

Tetany, Gastric. TREATMENT. Soluble calcium salts rapidly control symptoms in the tetany of gastrectasis; continued use required. Large saline infusions, as well as parathyroid preparations (nucleoproteid) by the mouth, are but slightly effective. *Kinnicutt.* 123

Tic. DIAGNOSIS. True tic, which is of psychic origin, and is a sequel to the unhindered repetition of a once voluntary purposive act, is distinguished from spasm, which is due to irritation of any reflex arc of the bulbo-spinal tract, as follows: 1. Movement slower. 2. Occurs in volleys. 3. No muscular weakness. 4. Reflexes normal. 5. Painless. 6. Disappears in sleep. 7. Pseudo-coördinate and intentional. 8. Influenced by volition or emotion, and followed by satisfaction. Upon this distinction depends whether treatment shall be surgical, medical or psychotherapeutic. *T. A. Williams.* 5

Toxæmia of Pregnancy. TREATMENT. Failure of thyroid gland to hypertrophy during pregnancy probably related to toxæmia. Administration of thyroid beneficial by supplying this deficiency and by diuretic action. Saline extract of fresh human thyroid proteids more rapid and reliable in action than ordinary sheep thyroids. Hypodermic use of thyroid proteids greatly superior to oral use. *Ward, Jr.* 27

Tuberculosis of Bladder. TREATMENT. 1. General hygiene. 2. Internally, 5 grains of guaiacal carbonate *t. i. d.* 3. Locally, instill into bladder every other day 20 drops of 20 per cent. iodoform emulsion in liquid alboline, with deep urethral syringe. *Christian.* 417

Tuberculosis of Joints. TREATMENT. In children, conservative treatment should be followed until all hope of saving limb is gone, and then only give place to amputation; resections out of place in children. In adults, unless conservative treatment yields distinct

improvement in six months, operative intervention (usually resection) is indicated. Best method of healing an adult tuberculous joint is, wherever possible (especially in knee), to deprive it of motion and convert it into a synostosis; diseased tissue may be left behind, as of little importance after this end secured. Operation to secure ankylosis of knee: straight incision across patella. Saw through patella and reflect fragments. Divide lateral aponeurosis, but not lateral nor crucial ligaments. Saw off ends of femur and remove cartilages of tibia. Patella may be dissected out or left in. Sew up joint, insert rubber tissue drain, if desired, to be left in only twenty-four hours, and immobilize limb in plaster of Paris. *Ely.* 609

Case of "white swelling" of knee found due to sporotrichosis. Before operating on similar supposedly tuberculous joint lesions, possibility of sporotrichosis should be considered. *Jeanseime and Chevallier.* 615

Tuberculosis, Laryngeal. TREATMENT. Injections of alcohol into superior laryngeal nerve effectually relieved severe dysphagia in 6 cases. Use Schlösser's needle, with point bluntly bevelled. Patient horizontal. Make affected half of larynx project by pressing on sound side. With index finger find painful spot between thyroid cartilage and hyoid, pressing in from without. Push in needle for $1\frac{1}{2}$ centimeters at this spot, and move it about to seek spot where patient feels pain in ear. Inject solution of 2 grains of β -eucaine hydrochloride in an ounce of 80 per cent. alcohol, warmed to 45° C. (113° F.). Continue injection until pain in ear ceases. Patient not to swallow or speak during operation. *D. Grant.* 618

Case with marked infiltration of epiglottis and aryepiglottic folds, and ulceration of one vocal cord, in which three applications of galvanocautery led to recovery. Powder of anæsthesin and orthoform, equal parts, inhaled into larynx for pain. *D. Grant.* 426

Tuberculosis, Pulmonary. DIAGNOSIS. X-ray method contributes to early diagnosis. Where symptoms point to pulmonary lesion but no physical signs are demonstrable, radiography may show peribronchial infiltration or enlarged bronchial glands. Later, consolidated areas and cavities can be accurately located at any depth within the lung. *Leonard.* 177

TREATMENT. Mercury succinimide administered hypodermically in 8 cases caused general improvement and appeared to exert a marked controlling influence over the tuberculous process. *Freeman.* 90

Beechwood creosote given both internally and by inhalation affords much relief to symptoms in nearly all cases and in all stages. It is also valuable as a preventive in those predisposed or exposed to the infection. Rest, fresh air, proper food, with or without lime salts. *Beverley Robinson.* 23

Menthol ointment (30 or 40 per cent.) used with benefit. It is rubbed in daily for 10 minutes, skin of back, chest and thighs being successively employed. Improvement manifest alike in symptoms and physical signs. Probably acts directly on involved tissues. Treatment should be persisted in for 4 months or more. Also valuable in old fibroid pneumonias. *Stepp.* Page 238

Early tuberculosis treated by antiseptic inhalations with remarkable results. Solution used: Phenol, creosote, spirits of chloroform, of each 8 cubic centimeters (f3ij); tincture of iodine, spirits of ether, of each 4 cubic centimeters (f3j). Of this 6 to 8 drops are poured on the felt or sponge of Yeo's perforated zinc inhaler, and inhaled regularly every hour in the daytime, as well as 2 or 3 times during the night, when patient is awake. Cough is thereby relieved without sedatives and expectoration facilitated. Where hæmoptysis, add turpentine to the solution. In all cases patient should rest in bed for a week, with windows of bed-room open. In second week he may rise for an hour or two daily, and later walk in the open air every morning. When temperature is normal, use of inhaler may be gradually left off. *Lees.* 93

Two cases distinctly improved in all respects by treatment with thymus gland; 30 to 120 grains three or four times daily. Author uses fresh thymus of calves, dried by himself. *Gwyer.* 424

Tuberculosis, Superficial. TREATMENT. Mercury succinimide (gr. $\frac{1}{2}$ subcutaneously every other day) with mercury protiodide (gr. $\frac{1}{4}$ by mouth *t.i.d.*) gave good results in two obstinate cases of scrofuloderma and one of pharyngeal infiltration. Curetting, cauterization and X-rays ineffective until mercury added. *Hertzberg.* 25

Typhoid Fever. INTESTINAL PERFORATION. Mortality after operation for perforation in children is below 50 per cent.—25 per cent. lower than in adults. *Jopson and Gittings.* 25

TREATMENT. Alcohol compresses to the abdomen in children advocated in preference to the cold tub-bath treatment, which author regards as favoring hæmorrhage or perforation and as liable to work injury to the heart. Compresses used in 12 severe cases which were rendered milder. Pad of absorbent cotton or eight thicknesses of gauze wrung out in 85 per cent. alcohol (90 per cent. for adults), applied to abdomen, covered with cold-water gauze compress, and held in place by flannel band. Water compress renewed every hour, alcohol compress every 2 hours. Acts by local active hyperæmia, while alcohol absorbed stimulates heart. Used also in peritonitis and appendicitis with benefit. *Chéinisse.* 122

Typhoid Fever in Pregnancy. PROGNOSIS. Pregnancy has no marked effect on mortality in typhoid. Abortion or premature labor occurs, however, in 65 per cent. of cases, commonly in second week, occasionally in convalescence. Fætal mortality 56 per cent.

Expectant treatment advocated. Mother's condition should be taken as guide in deciding on induction of premature labor. *Brickner and Oppenheimer.* 619

Ulcer of Leg, Syphilitic. TREATMENT. Reduce alcohol consumed. Mercury and iodides, preferably organic iodides, well diluted, alternated with courses of strychnine particularly when ulcer again becomes sluggish. General antiseptic application: Boroglyceride 5j, hot water Oss. Locally, black or yellow wash; solution of phenol (1 to 100); tincture of iodine (1 to 4 or 5 of hot water); ammoniated mercury or yellow oxide ointments. Dry treatment: Zinc oxide 3iij, calomel, 3ss, infusorial earth q. s. ad. 5j. X-rays have benefited some cases. Where ulcer resists cure due to tethering of its edge to underlying bone, apply antiseptic fomentations, scrape ulcerated surface with Volkman's sharp spoon, undercut edges with scalpel, and draw them together, freshening skin-margins. *W. Evans.* 23

Uncinariasis. DIAGNOSIS. In mild cases eosinophilia is often not available for diagnosis. Following method recommended: Dilute faecal material ten times with water and centrifugate at high speed for 6 or 8 seconds. Pour off supernatant fluid, shake sediment with water, and centrifugate again just long enough to throw eggs to bottom (usually 2 seconds). Repeat once or twice, remove sediment with pipette and examine for eggs. Calcium chloride solution assists in removal of debris. Large amounts of faeces may have to be examined before eggs discovered. *Bass.* 168

Vomiting in Infants. TREATMENT. Condition often a mere habit, vomiting reflex being established owing to former injudicious feeding. Administer chloral, bromide or chlorotone until habit is broken; or better, exhaust the vomiting center by giving harmless emetic, as wine of ipecac and carbonate of ammonium, half an hour before feeding. Latter method used in 55 cases; immediate cure in 30, and improvement in 10. *Pritchard.* 239

Vomiting of Pregnancy. TREATMENT. Adrenalin used with success in a case previously uncontrollable. Ten drops of 1 to 1,000 adrenalin solution given morning and night, at first in enema of 150 grams (5 ounces) water with 20 drops of laudanum, after 3 days in ice-water by the mouth. Nutrient enemata also given. Vomiting ceased on second day, and on third patient could retain a little food. Recurrence of nausea toward end of pregnancy relieved by 10 drops daily for 5 days. *Rebaudi.* 94

Vomiting, Postoperative. TREATMENT. Where nausea, vomiting or gaseous distention after abdominal section, employ gastric lavage, which often checks incipient peritonitis. Spray pharynx with 2 per cent. cocaine solution 10 minutes before tube introduced. *A. J. Ochsner.* 360

Wassermann Reaction. Positive reaction often noted in cases of leprosy giving no history or symptoms of syphilis, chiefly in the tubercular and mixed forms of the disease (31 out of 38). In cases of the maculo-anæsthetic and purely trophic type it is usually negative (3 positive out of 22). *H. Fox.* Page 355

Reaction of fixation studied in 76 children, including 72 cases of hereditary syphilis. Where disease appears early 87.5 per cent. of cases give positive reaction. Reaction may be rendered negative by mercurial treatment. Where active stage of disease past, response depends on time elapsed since last symptoms. In hereditary syphilis appearing late, only 20 per cent. of cases gave positive test; hence, negative reaction does not eliminate syphilis, especially after a certain age. Reaction uniformly negative in non-syphilitic children.

Scarlet fever not a source of error. *Demanche and Détré.* 542

Whooping-Cough. TREATMENT. Oxygen used in 30 cases. It is given at each paroxysm. Cyanosis subsides and suffocation is prevented. Child keeps in good condition with appetite throughout. It is best inhaled through a funnel; 10 to 12 liters necessary to control a paroxysm. Where broncho-pneumonia threatens, oxygen should be inhaled every hour; it renders lung aseptic. *Weil.* 64

Quinine salve applied to nasal mucous membrane with benefit. Used 1 to 2½ grams of quinine in 10 to 15 grams of lard (30 grains to 2 drams in 1 ounce), and introduced piece of salve size of pea into each nostril 3 to 4 times daily with glass rod, head being thrown back. Symptoms much improved after 3 or 4 days. Especially effective in very young children. *Berliner.* 301

Book Reviews

THE CONQUEST OF DISEASE THROUGH ANIMAL EXPERIMENTATION. By James Peter Warbasse, M.D., Surgeon to the German Hospital, Brooklyn, N. Y.; Author of "Medical Sociology." New York and London: D. Appleton & Company, 1910.

Dr. Warbasse has done great service to the laborers in the field of pathologic sciences, who endeavor to wrest from nature her secrets in order that life shall be more assured, pain-free, etc., by bringing together judiciously and concisely many important points which are made the subject of acrimonious controversy. No one can read this little book with an open mind and fail to be impressed with the enormous service rendered to humanity by animal experimentation. Certain physicians occasionally state the opinion that experiments on animals are needless and have proved of little use. Such persons must be either grossly ignorant of the facts, or unduly misled by their emotions. If they cherish any desire really to know the facts and the truth, let them read this book, where they will find much that they ought to know and many references to scientific works that they would do well to consult before forming opinions which may prove hasty or inexact. The argument of the antivivisectionists is based largely upon the fact that, whatever good we may have accomplished by animal experimentation, at least it is unjustified. Therefore, the question resolves itself into a matter of opinion.—J. M. T.

THE DISEASES OF THE NOSE, MOUTH, PHARYNX AND LARYNX. A Textbook for Students and Practitioners of Medicine. By Dr. Alfred Bruck (Berlin). Edited and translated by F. W. Forbes Ross, M.D. Edin., F. R. C. S. Eng., Late Civil Surgeon at His Britannic Majesty's Guards Hospital, London; Assistant North London Hospital for Consumption and Diseases of the Chest; Clinical Assistant Metropolitan Hospital for Diseases of the Nose and Throat, etc. Assisted by Friedrich Gans, M.D. Illustrated by 217 Figures and Diagrams in the text, many of them in Colors. New York: Rebman Company, 1910. Cloth, \$5.00.

In the preparation of this work, the author had in mind the requirements of the students and the men in general practice, and prepared and arranged the subject-matter accordingly, eliminating from the text unnecessary discussion of disputed points and retaining only such material as is considered of value to the above classes of readers.

The contents are divided into four parts: 1. Diseases of the nose and its accessory cavities. 2. Diseases of the mouth. 3. Diseases of the pharynx. 4. Diseases of the larynx and trachea. Each of these parts is further divided into a general and a special section. The general section includes a consideration of the anatomy, the physiology, the method of examination, the course of examination, the general treatment, and hygiene and prophylaxis, while the special section takes up the discussion of the various affections of the part. A well-prepared index is also appended, adding much to the value of the book as one of quick

reference and eliminating the necessity for prolonged search after any desired information. The text is presented in a manner which is clear and concise, and its usefulness is frequently augmented by well-executed illustrations. The anatomical cuts are especially worthy of mention, being so well produced as to leave little or no doubt as to the relation of the various anatomical parts. The author appears to have fulfilled the promises of the title pages, and has presented a work which is of value even to the specialist.—R. B. S.

DISEASES OF THE EYE. A Handbook of Ophthalmic Practice for Students and Practitioners. By G. E. de Schweinitz, A.M., M.D., Professor of Ophthalmology in the University of Pennsylvania and Ophthalmic Surgeon to the University Hospital; Consulting Ophthalmic Surgeon to the Philadelphia Polyclinic; Ophthalmic Surgeon to the Philadelphia Hospital. Sixth Edition. Thoroughly Revised. 945 Pages, with 351 Illustrations and 7 Chromolithographic Plates. Philadelphia and London: W. B. Saunders Company, 1910. Cloth, \$5.00.

Much has been added in this revision of de Schweinitz's most practical book, and the work may be said to express the subject of ophthalmology up to the present time. Among the chapters especially re-written may be mentioned those on Glaucoma, Sympathetic Ophthalmia, Diseases of the Optic Nerve in connection with intracranial disorders, and that on Cataract. Certain others are entirely new in this edition, viz.: Obstetric Injuries of the Cornea; Posterior Scleritis; Cyanosis of the Retina; Ataxyl Amblyopia; the Ocular Complications of Nasal Accessory Sinus Disease, and Intermittent Exophthalmos, while the descriptions of a number of recently accepted operative procedures have been added. The present edition will undoubtedly maintain the high position obtained by all previous issues; indeed, it may be considered to be the most perfect and the most useful textbook of the diseases of the eye in our language.—B. C.

THE PROPAGANDA FOR REFORM IN PROPRIETARY MEDICINES. Sixth Edition. Pp. 292. Illustrated. Reprinted from the Journal of the American Medical Association, 1910. Paper Bound, 10 cents; Cloth, 35 cents.

This small volume presents in convenient form most of the exposures that have appeared in the Journal of the American Medical Association showing fraud either in the composition of various proprietary preparations or in the claims made for them. Not all of the products dealt with, however, are such as are—or have been—used by the medical profession. Many of the preparations have been subjected to analysis in the chemical laboratory of the Association, and the results of these examinations are included in the book. This compilation will no doubt prove of great value to the practitioner by enlightening him as to the uselessness of many of the so-called ethical proprietary remedies on the market and by placing him in a position to answer intelligently questions that his patients may ask concerning the virtues (!) of some of the widely advertised "patent medicines."

PRACTICAL HYDROTHERAPY. A Manual for Students and Practitioners. By Curran Pope, M.D., Professor of Physiotherapy, University of Louisville, Ky., etc. Cincinnati Medical Book Company, 1909.

Dr. Pope has here given us an admirable book dealing with methods of water-cure, and very much more. Quite aside from the immediate subject, the practitioner will find a number of important observations and practical recommendations which will prove of immense service in dealing with many phases of disease, both acute and chronic. There are whole chapters devoted to conditions which meet the practitioner in his daily work and with which he has never been made familiar in the systematic courses. Especially would we commend the chapter on the "Anatomy and Physiology of the Skin," and indeed the first two hundred pages. Dr. Pope wisely recommends to practitioners that they seek out some well-equipped establishment and on themselves experience the effects which can be produced. This the reviewer has himself done and with much advantage. In this book one may learn, first, how to make judicious use of water under the ordinary exigencies of private practice, and, second, how to appreciate the resources of a well-equipped institution. Aside from the undoubted and admirable physical effects, it must not be forgotten that many protracted disorders present themselves which require diverse kinds of psychomotor impressions and training, notably narcotism, alcoholism and the like. Here hydrotherapy is peculiarly valuable. We cannot too strongly recommend that the general practitioner shall become practically aware of the powerful resources which reside in systematized hydrotherapeutic measures. The book affords most interesting reading, and presents novel phases of physiology and pathology, as well as a multitude of suggestions whereby obstinate disorders can be not only overcome, but even permanently cured.—J. M. T.

[End of Editorial Department]

The General Field

The Youthful Degenerate.

A great deal has been learned in a comparatively few years as to the proper disposition of the youthful offender against the ordinary laws of society. Those who have investigated the subject have found out that there are two classes of offenders, a comparatively small number who are really degenerates, physically, mentally and morally, and a much larger number who are merely neglected.

The unlimited energy of childhood must expand itself in some manner. Provided that it can have a healthy outlet, this expenditure is along normal lines and is in every way beneficial.

Where there is no proper supervision and unwholesome surroundings, it requires but little to shift the scope of these activities into unwholesome channels.

The penal institutions are full of people who, had they been favored with wise and wholesome supervision in childhood days, might have been useful members of society. It is greatly to be hoped that the present generation of children will be more fortunate.

As the cities increase in size the social conditions become more complex. Laying aside every moral consideration (which certainly should not be laid aside) there are sufficient financial reasons why every young child which manifests tendencies to wrongdoing should be carefully guarded by those who represent the better element of society.

If we subtract from the estimated value of a youthful citizen in any community the total value of such usefulness and then take into consideration the cost of maintaining a criminal in a penal institution, there seems to be but one side

to the argument. This means probation officers; and salaries should be paid to these people that are commensurate with the value of their services. The neglected child with mischievous tendencies must be looked after, and, as usual, those in the forefront of the movement rely upon the doctor as a valuable ally.

The Telephone and Public Health.

Certain sanitarians who are looking for germs of disease on all sides have sent out some C. Q. D. danger signals as to the telephone as a source of infection. All these movements are educational and therefore beneficial.

The chief source of danger to the public health, however, as associated with the telephone is not in the number of germs which may be lying in ambush in the transmitter, but it is rather the serious moral lapses and nervous excitations resulting from poor service by which the telephone produces the most of its physical injuries.

Neglect of Stomach Disorders.

Considering the fact that a large number of serious illnesses are primarily due to lack of proper nutrition, it is surprising that so little attention has been given by physicians in general to the study of digestive disorders.

A new factor enters into the situation. As the cities become congested and the question of food supplies becomes of steadily increasing significance, it is extremely important that people of limited incomes be educated as to how they can nourish their bodies with comparatively inexpensive foods. The people of the Orient have through stress of necessity

long since acquired this knowledge, but under happier conditions on this side of the globe there has been a wider range of selection. The food which satisfies the palate of the growing child is usually regarded with tolerance if not preference to an advanced age. It is extremely important, therefore, both from the physical and economical standpoint, that the selection of foods for the average family of moderate means be directed with intelligence.

A certain sum judiciously expended for foods may provide nourishment not only sufficient in quantity but capable of perfect assimilation. On the other hand the same amount can be so expended as to provide very incomplete nutrition. It is a matter of great importance that the public be instructed as to how they can retain the highest degree of digestive capacity—thus the problem, like many others, likewise comes home to the general family doctor for solution.

Forestry and Health.

The relations between a well-established policy of forestry and the public health can be easily comprehended. The extremes of climate are modified in proportion to the forest growths on any given area.

A desire to shirk the responsibilities of life is responsible for a great number of preventable diseases. That "what is anybody's business is nobody's business" illustrates a very well known principle of human nature. The immense losses during the past few months through forest fires with the resulting influence upon the soil make it a national calamity. Those extremely short-sighted legislators who, in their zeal to protect their business friends, have stood in the way of proper appropriations for the forest service are now standing out conspicu-

ously before the enlightened public sentiment of the country as having extended a very pernicious influence.

The plan for the establishment of a cabinet department of public health would seem to have been abundantly vindicated by these forest disasters. It can be taken for granted that with such a department in actual operation the importance of looking after the forest reserves, the establishment of tree-planting associations in the cities and the education of the public in the importance of forest conservation would receive a greatly increased impetus.

Mental Instability of the Average Man.

It is in attending to his various conventional duties that the average individual appears to the best advantage. Habit has enabled him to proceed along dignified lines and his personality impresses itself upon his associates in a way to reflect a high degree of credit.

The philosopher watching an orderly procession of business people along a city thoroughfare would conclude that man, the most highly developed of all animals, had achieved a high degree of perfection.

Unfortunately it only requires a slight deviation from normal to show that man, the animal of the highest perfection, is as yet very erratic. Just let the dignified and highly developed lord of creation be accidentally jostled when boarding a car or meet with any one of a great variety of disconcerting experiences due to necessity of close contact with his fellows and a startling change is often manifested.

About 20,000 specimens of the noble animal, man, assembled in Nevada last summer to witness a very well advertised prizefight. The hardships of travel and the inconveniences of a town with very inadequate hotel facilities were

entirely overlooked. That which makes life worth living in the ordinary sense was dispensed with.

It, however, requires a political campaign to bring out in bold relief the mental weaknesses of man, the noblest animal. Popular government is no doubt vindicated by these contests at the ballot-box, but the pathway to this vindication is strewn with wreckage of most of the glorious mental attributes which collectively constitute man's claim to lofty estate.

The development of 10,000 years toward mental and spiritual perfection may be smashed into atoms in a comparatively few seconds when something goes wrong.

The outlook would be somewhat discouraging were it not for the saving grace of the sense of humor which usually comes to the rescue under all trying circumstances. That which would otherwise be tragic becomes ludicrously amusing. While the sense of humor persists there is always hope for the individual who is under mental strain.

A Serious Enough Subject.

With never-failing enthusiasm the woman's suffrage advocates are preparing for a strenuous legislative campaign. The suffragettes untrammelled by the care of a husband and children and equipped with the "gift of gab" will be delegated to interview the members of the various legislatures, distribute tracts among them and employ every "third-house" artifice in the "glorious cause."

The reporters detailed to chronicle the legislative doings, mostly young and comparatively inexperienced, have a way of referring to the suffragettes by their first names only. This indicates rashness rather than courage. Nothing is more offensive to the real enthusiastic

suffragette than to be referred to by a cub reporter as "Susie" or "Annette."

It is unwise to lay up wrath against the "future day of wrath." The suffragettes make constant progress. Woman's suffrage is one of the things which will eventually become an established fact, and ridicule is a poor weapon with which to withstand this movement. There are plenty of good substantial reasons which on suitable occasions had much better be employed.

Sometime the custom of passing a woman's suffrage bill in one branch of the Legislature, under an agreement that the other branch shall kill the bill, will meet with shipwreck. It is well to be prepared to accept magnanimous terms from the victors.

The Health Value of the Bungalow.

One of the most beneficial social institutions of recent years is the bungalow. The luxurious tendencies of the average well-to-do family become so burdensome that even luxury itself palls on the appetite. The bungalow affords a relief. There ought to be a million or more bungalows erected in the United States within twelve months. They can be constructed of very inexpensive materials, and if they only provide opportunity for relief from too elaborate luxury in the home they will have richly paid for themselves.

A small shack with a stone hearth, beds of fir boughs, some coffee, bacon, biscuits and a few canned vegetables and you have the elementary requirements of the simple life.

It is only fair that the rest of the family should cater to the house mother once in a while and this affords the opportunity. May the bungalow habit spread until every mother's son becomes an expert amateur cook. It is time to

take some of the burden off from the shoulders of the conventional house-keeper. She is ripe for revolt and no wonder. It has long been the masculine providence to eat and criticise. It is now his time to make good.

Probable Increased Prevalence of Frostbite.

As the navigation of the air becomes an assured fact, aviators have more and more to say about the intense cold which they encounter a short distance away from the earth's surface. Thus, the probabilities are that frostbite which does not figure to a large extent among prevailing maladies will assume larger and more extensive importance.

Frostbite is no joke even if the pain is relieved within a reasonable time. The effects of frostbite persist during the balance of the lifetime of the victim. Frostbitten toes are a never-ending source of inconvenience to the proprietor. The boy in his teens who carelessly allows himself to be frostbitten will have plenty of reason to remember it when he becomes advanced in years.

The Effects of Hazing at the Colleges.

Occasionally there appears an exaggerated news report of some hazing outrage perpetrated upon one or more defenseless martyrs of the freshman class at some college. Under these circumstances much indignation is manifested by lady-like men and indignant grandmothers.

The fact is that school hazing is one of the most beneficial branches of the curriculum. The dear boy who has been the idol of his parents and who has incidentally become a conceited donkey goes to college. He has everything in his equipment which fond maternal solicitude and an indulgent paternal pocketbook will provide. He feels he is likely to shed a great deal of luster upon

the institution. He does shed luster,—but in a different way. He enables that instinctive contempt for egotism which is to be found in every normal youth to have full swing. Three weeks from the opening of the college, the chances are that he will have made more progress toward becoming a man than he would have made in three years had he remained at home.

There is no democracy like that of the average normal group of boys. Selfishness—professional, commercial and domestic—has not as yet made its impress. Manliness is appreciated at its full worth and hazing is but an incident, and a beneficial one in most cases.

An Apparently Simple Rule of Health.

Dr. Arnold Lorand, in his very interesting book "Old Age Deferred," has laid down some excellent rules with which to resist the insidious approach of senility. Some of these rules are conventional and others are not, but they are all apparently practical.

Perhaps the most valuable lesson which one gains from a perusal of this book is that, after all is said and done, the most important rule of health is to avoid extremes.

In considering various phases of human action there are always two opposing viewpoints. In his revolt against the abuses associated with the use of alcoholics the prohibitionist goes to the opposite extreme. The vegetarian believes that all meat eaters are being poisoned. The meat eaters consider the vegetarian as underfed and mentally deficient, and so along the line.

The teachings of Dr. Lorand are to the effect that the greatest factor in the production of good health and longevity is to avoid extremes, whether in the form of exercise, diet or personal habits.

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Original Articles

PHILISTINE AND GENIUS.*

By BORIS SIDIS, M.A., Ph.D., M.D.,
BOSTON, MASS.

I REGARD it as a privilege to have the opportunity to address you. Many of you are teachers in quest for improvement of the powers of training and directing the young, and all of you earnestly desire to increase your knowledge and enlarge your views of man and the world. You have come to this University, during this short summer season, in order to get some help in the work you carry on the rest of the year. You have voluntarily given up the vacation to which you are entitled in order to fit yourself for the duties of your life-vocation. I take then, for granted, that your work is with you a serious matter, and that you put forth all your efforts to achieve your best in the walk of life which you have chosen. I also assume that as men and women of liberal education you are not limited, as some teachers and pedagogues are, to the narrow interests of one specialized subject. I assume that you are specially interested in the development of personality as a whole, the true education of the young. I also assume that you realize that what is requisite is not some more routine and desiccated quasi-scientific methods of educational psychology, academic pseudogogics and philistine normal school training, but what is needed is more light on the problems of life. What you want is not the training of philistine, but the education of genius.

I say "the problems of life." Is it not too big a phrase to employ? On a second thought, however, I must say that your problems *are* the problems of life. For the problems of education are fundamental, they are at the bottom of all vital problems. The ancient Greeks were aware of it and paid special attention to education. In rearing his revolutionary, utopian edifice, Plato insists on education as the foundation of a new social, moral, and intellectual life. Plato, in his Republic, makes Socrates tell his interlocutor, Adeimantus:

* Delivered before the Harvard Summer School, at the Commencement Exercises, Saunder's Theatre, August, 1909.

"Then you are aware that in every work the *beginning* is the most important part, especially in dealing with anything young and tender? For that is the time when any impression which one may desire to communicate is most readily stamped and taken." We may say that all man's struggles, religious, moral, and economical, all the combats and conflicts that fill the history of mankind, can be traced finally to the nature and vigor of the desires, beliefs, and strivings which have been cultivated by the social environment in the early life of the individual. The character of a nation is moulded by the nature of its education. *The character of society depends on its schooling.* The fatalism, the submissiveness of the oriental, the æstheticism, the independence, love of innovations and inquisitiveness of the ancient Greek, the ruggedness, sturdiness, harshness, and conservatism of the ancient Roman, the emotionalism, the religious fervor of the ancient Hebrew, the commercialism, restlessness, speculation and scientific spirit of modern times are all the results of the nature of the early education the individual gets in his respective social environment. We may say that the education of early life forms the very foundation of the social structure. Like clay in the hands of the potter, so is man in the hands of his community. Society fashions the beliefs, the desires, the aims, the strivings, the knowledge, the ideals, the character, the minds, the very selves of its constituent units. To whom as a class is this vital function of moulding minds entrusted? It is entrusted to you, to you teachers. To your hands, to your care is entrusted the fate of young generations, the fate of the future community, which consciously or unconsciously you fashion according to the accepted standards and traditions with which you have been imbued in your own education.

It is related, I think, in Plutarch's *Lives*, of Themistocles telling with the ironical frankness characteristic of the Greek temperament that his son possessed the greatest power in Greece: "For the Athenians command the rest of Greece, I command the Athenians, his mother commands me, and he commands his mother." The bit of Greek irony is not without its significance. The mind of the growing generation controls the future of nations. The boy is the father to the man, as the proverb has it; he controls the future. But who controls the boy? The school, the teacher of the child's early life. For it is in early life that the foundation of our mental edifice is laid. All that is good, valid and solid in man's mental structure depends on the breadth, width, depth and solidity of that foundation.

That the groundwork of man's character is laid in his childhood appears as a trivial platitude. I am almost ashamed to bring it before you. And still, as I look round me and find how apt we are to forget this simple precept which is so fundamental in our life, I cannot help calling your attention to it. If we consider the matter, we can well understand the reason why its full significance is not realized. We must remember that all science begins with axioms which are apparently truisms. What is more of a truism than the axioms of Geometry and Mechanics—that the whole is greater than the part, that things which are equal to the same thing are equal to one another, or that a body remains in the same state unless an external force changes it? And

still the whole of Mathematics and Mechanics is built on those simple axioms. The elements of science are just such obvious platitudes. What is needed is to use them as efficient tools and by their means draw the consequent effects. The same holds true in the science of education. The axiom or the law of early training is not new, it is well known, but it is unfortunately too often neglected and forgotten, and its significance almost completely lost.

It is certainly surprising how this law of early training is so totally ignored in the education of the child. Not only do we neglect to lay the necessary solid basis in the early life of the child, a solid basis ready for the future structure, we do not even take care to clear the ground. In fact, we even make the child's soul a dunghill, full of vermin, of superstition, possessed by hosts of ghosts of fears and prejudices,—a hideous heap saturated with the spirit of credulity. We regard the child's mind as a *tabula rasa*, a vacant lot, and empty on it all our rubbish and refuse. We labor under the delusion that stories and fairy-tales, myths and deceptions about life and man are good for the child's mind. Is it a wonder that on such a foundation men can only put up shacks and shanties? We forget the simple fact that what is harmful for the adult is still more harmful to the child. Surely what is poisonous to the grown-up mind cannot be useful food to the young. If credulity in old wives' tales, lack of individuality, sheepish submissiveness, barrack-discipline, unquestioned, uncritical belief in authority, meaningless imitation of jingles and gibberish, memorization of mother-goose wisdom, repetition of incomprehensible prayers and articles of creed, unintelligent aping of good manners, silly games, prejudices and superstitions and fears of the supernormal and supernatural are censured in adults, why should we approve their cultivation in the young?

At home and at school we drill into the child's mind uncritical beliefs in stories and tales, fictions and figments, fables and myths, creeds and dogmas which poison the very sources of mental life. At home and at school we give the child over as a prey to all sorts of fatal germs of mental disease and moral depravity. We leave the child's mind an open field to be sown with dragon's teeth which bring forth a whole crop of pernicious tendencies,—love and admiration of successful evil, and adoration of the rule of brute force. From the dragon's teeth sown in early childhood there rises in later life a whole brood of flint-hearted men who blindly jostle and fight and mercilessly tear one another, to obtain for some greedy Jason and witch of a Medea their coveted golden fleece.

We regard with disapproval the bloody combats of some savage tribe; we regard with horror the sacrifice of children and prisoners to some idol of a Phœnician Moloch and Mexican Huitzlio-Potchli; we are shocked at the criminal proceedings of the infamous Torquemada with his inquisition glorying in its terrors and tortures in the name of Christ; we are sickened as we read of the religious wars in Europe and shudder at the horrors of the night of St. Bartholomew; we are appalled by the recent slaughters of the Jews in Russia, by the wholesale massacre of the Christians in Turkey. All such atrocities we say belong to barbaric ages and are only committed in semi-civilized countries. We flatter ourselves that we are different in this age of enlightenment and

civilization. Are we different? Have we changed? Have we a right to fling stones at our older brothers, the savage and the barbarian? We are so used to our life that we do not notice its evils and misery. We can easily see the mote in the eye of our neighbor, but do not notice the beam in our own.

We are still savage at heart. Our civilization is but mere gloss, a thin coating of paint and varnish. Our methods of inflicting pain are more refined than those of the Indian, but no less cruel, while the number of the victims sacrificed to our greed and rapacity may even exceed the numbers fallen by the sword of the barbarian or by the torch of the fanatic. The slums in our cities are foul and filthy, teeming with deadly germs of disease where the mortality of our infants and children in some cases rises to the frightful figure of 204 per thousand!

We press our children into the triumphant march of our industrial Juggernaut. Over 1,700,000 children under 15 years of age toil in fields, factories, mines and workshops. The slums and the factory cripple the energies of our young generation. The slaughter of the innocents and the sacrifice of our children to the insatiable Moloch of industry exclude us from the rank of civilized society and place us on the level of barbaric nations. Our educators are narrow-minded pedants who, being occupied with the dry bones of textbooks and the sawdust of pedagogics and the would-be scientific experiments of educational psychology, are ignorant of the real vital problems of human interests, a knowledge of which goes to make the truly educated man.

About the middle of the nineteenth century, Buckle made the prediction that no war was any more to occur among civilized nations. Henceforth peace is to reign supreme. "The wolf shall dwell with the lamb, and the leopard shall lie down with the kid; their young ones shall lie down together, and the lion shall eat straw like the ox. . . . Nations shall beat their swords into ploughshares and their spears into pruning hooks. Nation shall not lift up sword against nation, nor shall they learn war any more." This prophecy was rather hasty. We have had since the Civil war, the Franco-Prussian war, the Spanish-American war, the Boer war, the Russo-Japanese war, not counting the ceaseless wars of extermination carried on by civilized nations among various semi-civilized nations and primitive tribes. Civilized nations do not beat their swords into ploughshares, but keep on increasing the strength of their "armed peace," and are ready to fight bloody battles in the quest of new lands and the conquest of new markets. Thus the United States, "*the most peaceful* of all nations," spends on its army and navy more than a quarter of a billion dollars! In spite of the Hague conference of peace convoked by the peace-loving Czar no other age had such large standing armies provided with such costly and efficient weapons of execution ready for instant use. The red specter still stalks abroad claiming its victims. We still believe in the baptism of fire and redemption by blood. The dogma of blood-redemption is still at the basis of our faith, and, consciously or unconsciously, we brand that sacred creed on the minds of the young generation.

We are not educated to see and understand the wretchedness, the misery of our life,—the evil of the world falls on the blind spot of our eye. In the

name of evolution and the survival of the fittest we justify the grasping arm of the strong, and even glory in the extermination of the weak. The weak, we say, must be weeded out by the processes of natural selection. The strong are the best,—it is right that they should survive and flourish like a green bay tree. The fact is that we are still dominated by the law of the jungle, the den and the cave. We are still wild at heart. We still harken to the call of the wild and are ruled by the fist, the claw and the tooth. Love, justice, gentleness, peace, reason, sympathy and pity, all humane feelings and promptings are with us sentiments of “unnatural” religion which we profess in our churches, but in which we really have no faith as good for actual life. We mistake brutishness for courage, and by fight and by war we train the beast in man.

All humane feelings are regarded as so many hindrances to progress; they favor, we claim, the survival of the weak. We are, of course, evolutionists, and believe most firmly in progress. We believe that the luxuries and vices of the strong are conducive to prosperity, and that the evils of life by the automatic grinding of that grind-organ known as the process of evolution *somehow* lead to a higher civilization.

When in the beginning of the 18th century Bernard de Mandeville proclaimed the apparently paradoxical principle that *Private Vices are Public Benefits*, the academic moralists were shocked at such profane brutality. Mandeville only proclaimed the leading, the guiding principle of the coming age of industrial prosperity. We now know better. Are we not evolutionists? Have we not learned that progress and evolution and the improvement of the race are brought about by the fierce struggle for existence, by the process of natural selection, by the merciless elimination of the weak, and by the triumph of the strong and the fit? What is the use of being sentimental? Like Brennus, the Gaul, we throw our sword on the scales of blinded justice and shout triumphantly “*Væ Victis!*”

We are confirmed optimists and sow optimism broadcast. We have optimistic clubs, mental scientists and Christian scientists,—all afflicted with incurable ophthalmia to surrounding evil and misery. We are scientific, we are evolutionists, we have faith in the sort of optimism taught by Leibnitz in his famous Theodicea. We are the Candids of our oracles, the Panglosses. You may possibly remember what Voltaire writes of Professor Pangloss: “Pangloss used to teach the science of metaphysico-theologo-cosmologo-noodleology. He demonstrated to admiration that there is no effect without a cause and that this is the best of all possible worlds. It has been proved, said Pangloss, that things cannot be otherwise than they are; for everything, the end for which everything is made is necessarily the best end. Observe how noses are made to carry spectacles, and spectacles we have accordingly. Everything that is, is the best that could possibly be.” It is such shallow optimism that now gains currency. Verily, we are stricken with mental blindness. “If we should bring clearly to a man’s sight,” says Schopenhauer, “the terrible sufferings and miseries to which his life is constantly exposed, he would be seized with horror, and if we were to conduct the confirmed optimist through

the hospitals, infirmaries, and surgical operating-rooms, through prisons, asylums, torture-chambers and slave-kennels, over battlefields and places of execution; if we were to open to him all the dark abodes of misery, where it hides itself from the glance of cold curiosity, he would understand at last the nature of this *best of possible worlds*."

Schopenhauer is metaphysical, pessimistic, but he is certainly not blinded by a shallow optimism to the realities of life. Drunk with the spirit of optimism, we do not realize the degradation, the misery and poverty of our life. Meanwhile the human genius, the genius which all of us possess, languishes, famishes, and perishes, while the brute alone emerges in triumph. We are so overcome by the faith in the transcendent, optimistic evolution of the good that, through the misty, heavenly, angelic visions, we do not discern the cloven foot of the devil.

Professor James, in a recent address, told the Radcliffe graduates that the aim of a college education is "*to recognize the good man*," when you see him. This advice may be good for Radcliffe young ladies; but, ladies and gentlemen, *the true education of life is the recognition of evil wherever it is met*. The Bible begins the story of man in a paradise of ignorance and finishes it with his tasting of the fruits of the forbidden tree of knowledge of good and evil. "And the eyes of them both were opened and they knew that they were naked. And the Lord God said,—Behold, the man is become as one of us to know good and evil, and now, lest he put forth his hand and take also of the tree of life and eat and live for ever. Therefore, the Lord God sent him forth from the garden of Eden. So he drove out the man." We prefer the sinful, mortal, but god-like man with his knowledge of evil to the brutish philistine in the bliss of Elysium.

In the education of the young generation the purpose of the nation is to bring up the child as a good man, as a good citizen devoted soul and body to the interests of social welfare. This purpose in the education of the young citizen is of the utmost importance in every society, but it is a vital need in a democratic society. We do not want narrow-minded patriots devoted to party-factions, nor bigoted sectarians, nor greedy *entrepreneurs* fastening in trusts, like so many barnacles, on the body-politic. We do not want ring-leaders and mobs, unscrupulous bosses and easily led voters. What we need is men having at heart the welfare of their fellowmen. The purpose of the education provided by the nation for its young generation is the rearing of good citizens. We need above all good citizens, active and intelligent, with a knowledge of life and with a delicate sense of discrimination and detection of evil in all its protean forms; we need strong-minded citizens with grit and courage to resist oppression and root out evil wherever it is found. A strong sense of recognition of evil should be the social sense of every well-educated citizen as a safeguard of social and national life. *The principle of recognition of evil under all its guises is at the basis of the true education of man.*

Is it not strange that this vital principle of education, the recognition of evil,—a fundamental principle with the great thinkers of humanity,—should remain so sadly neglected by our educators and public instructors? Our

educators are owl-wise, our teachers are pedants and all their ambition is the turning out of smooth, well-polished philistines. It is a sad case of the blind leading the blind.

It is certainly unfortunate that the favored type of superintendent of our public education is such a hopeless philistine, possessed of all the conceit of the mediocre business man. Routine is his ideal. Originality and genius are spurned and suppressed. Our school superintendent with his well-organized training-shop is proud of the fact that there is no place for genius in our schools. Unfortunate and degraded is the nation that has handed over its childhood and youth to guidance and control by hide-bound mediocrity. Our school-managers are respected by the laity as great educators and are looked up to by the teachers as able business men. Their merit is routine, discipline and the hiring of cheap teaching-employees. It is certainly unfortunate that a good number of our would-be-scientific pedagogues are such hopeless philistines, with so absurd an exaggeration of their importance that they are well satisfied if the mass of their pupils turn out exact reproductions of the silly pedagogue. What can be expected of a nation that entrusts the fate of its young generation to the care or carelessness of young girls, to the ire of old maids, and to pettifogging officials with their educational red tape, discipline and routine,—petty bureaucrats animated with a hatred toward talent and genius?

I assume that as teachers, as true teachers, you have no use for the process of cramming and stuffing of college-geese, and mentally indolent, morally obtuse and religiously "cultured" prigs and philistines, but that you realize that your true vocation is to get access to the latent energies of your pupils, to stimulate their reserve energies and educate, bring to light, man's genius. The science of psychopathology now sets forth a fundamental principle which is not only of the utmost importance in psychotherapeutics, but also in the domain of education; it is the principle of stored-up, dormant reserve-energy,—the principle of potential, subconscious, reserve-energy. It is claimed on good evidence, biological, physiological and psychopathological, that man possesses large stores of unused energy which the ordinary stimuli of life are not only unable to reach, but even tend to inhibit. Unusual combinations of circumstances, radical changes of the environment, often unloose the inhibitions brought about by the habitual narrow range of man's interests and surroundings. Such unloosening of inhibitions helps to release fresh supplies of stored-up reserve-energy. It is not the place here to discuss this fundamental principle; I can only state it in the most general way, and give its general trend in the domain of education.

You have heard the psychologizing educator advise the formation of good, fixed, stable habits in early life. Now I want to warn you against the dangers of such unrestricted advice. Fixed adaptations, stable habits, tend to raise the thresholds of mental life, tend to inhibit the liberation, the output of reserve-energy. *Avoid routine.* Do not let your pupils fall into the ruts of habits and customs. Do not let even the *best* of habits harden beyond the point of further possible modification. Where there is a tendency toward formation of overabundant mental cartilage, set your pupils to work under widely different

circumstances. Confront them with a changed set of conditions. Keep them on the move. Surprise them by some apparently paradoxical relations and strange phenomena. Do not let them settle down to one definite set of actions or reactions. Remember that rigidity, like sclerosis, induration of tissue, means decay of originality, destruction of man's genius. With solidified and unvariable habits not only does the reserve-energy become entirely inaccessible, but the very individuality is extinguished. Do not make of our children a nation of philistines. Why say, You make man in your own image? Do not make your schools machine-shops turning out on one uniform pattern so much mediocrity per year. *Cultivate variability.* The tendency toward variability is the most precious part of a good education. Beware of the philistine with his set, stable habits. The important thing in education is not so much *formation* of habits as the power of their *reformation*. The power of breaking up habits is by far the more essential factor of a good education. It is in this power of breaking down habits that we can find the key for the unlocking of the otherwise inaccessible stores of subconscious reserve-energy. *The cultivation of the power of habit-disintegration is what constitutes the proper education of man's genius.*¹

The power of breaking down or dissolving habits depends on the amount and strength of the *aqua fortis* of the intellect. The logical and critical activities of the individual should be cultivated with special care. The critical self, as we may put it, should have control over the automatic and the subconscious. For the subconscious forms the fertile soil for the breeding of the most dangerous germs of mental disease, epidemics, plagues and pestilences. We should try to develop the individual's critical abilities in early childhood, not permitting the suggestible subconsciousness to predominate and become overrun with noxious weeds and pests. We should be very careful with the child's critical self, as it is weak and has little resistance. We should therefore avoid all dominating authority and categorical imperative commands. Autocratic authority cultivates in the child the predisposition to abnormal suggestibility, to hypnotic states, and leads toward the dominance of the subconscious with its train of pernicious tendencies and deleterious results. There is a period in the child's life between the ages of five and ten when he is very inquisitive, asking all kinds of questions. *It is the age of discussion in the child.* This inquisitiveness and discussion should by all means be encouraged and fostered. We should aid the development of the spirit of inquisitiveness and curiosity in the child. For this is the acquisition of control over the stored-up, latent energies of man's genius. We should not arrest the child's questioning spirit, as we are often apt to do, but should strongly encourage the apparently meddlesome and troublesome searching and prying and scrutinizing of *whatever interests the child*. Everything should be open to the child's searching interest; nothing

¹ An editor of one of the academic journals on educational psychology writes to me as follows: "Your remarks on the avoidance of routine would be like a red rag to a bull for a number of educators who are emphasizing the importance of habit-formation in education at present."

should be suppressed and tabooed as too sacred for examination. The spirit of inquiry, the genius of man, is more sacred than any abstract belief, dogma and creed.

The most central, the most crucial part of the education of man's genius is *the knowledge, the recognition of evil* in all its protean forms and innumerable disguises, intellectual, æsthetic and moral, such as fallacies, sophisms, ugliness, deformity, prejudice, superstition, vice and depravity. Do not be afraid to discuss these matters with the child. For the knowledge, the recognition of evil does not only possess the virtue of immunization of the child's mind against all evil, but furnishes the main power for habit-disintegration with consequent release and control of potential reserve-energy, manifestations of human genius. When a man becomes contented and ceases to notice the evils of life, as is done by some modern religious sects, he loses his hold on the powers of man's genius, he loses touch with the throbbing pulse of humanity, he loses hold on reality and falls into subhuman groups.

The purpose of education, of a *liberal* education, is not to live in a fool's paradise, or to go through the world in a post-hypnotic state of negative hallucinations. The true aim of a liberal education is, as the Scriptures put it, to have the *eyes opened*,—to be free from all delusions, illusions, and the *fata morgana* of life. We prize a liberal education because it *liberates* us from subjection to superstitious fears, delivers us from the narrow bonds of prejudice, from the exalted or depressing delusions of moral paresis, intellectual *dementia præcox*, and religious paranoia. A liberal education liberates us from the enslavement to the degrading influence of *all* idol-worship. In the education of man do not play on his subconscious sense by deluding him by means of hypnotic and post-hypnotic suggestions of positive and negative hallucinations, with misty and mystic, beatific visions. Open his *eyes* to undisguised reality. Teach him, show him, how to strip the real from its unessential wrappings and adornments and see things in their nakedness. *Open the eyes of your pupils so that they shall see, understand and face courageously the evils of life.* Then will you do your duty as teachers, then will you give your pupils the proper education.

I have spoken of the fundamental law of early education. The question is "*how early?*" There are, of course, children who are backward in their development. This backwardness may either be congenital or may be due to some overlooked pathological condition that may be easily remedied by proper treatment. In the large majority of children, however, the beginning of education is between the second and third year. It is at that time that the child begins to form his interests. It is at that critical period that we have to seize the opportunity to guide the child's formative energies in the right channels. To delay is a mistake and a wrong to the child. We can at that early period awaken a love of knowledge which will persist through life. The child will as eagerly play in the game of knowledge as he now spends the most of his energies in meaningless games and objectless silly sports. We claim we are afraid to force the child's mind. We claim we are afraid to strain his *brain prematurely*. This is an error. In *directing* the course of the use of the child's energies we

do not force the child. If *you* do not *direct* the energies in the right course, the child will *waste* them in the *wrong* direction. The same amount of mental energy used in those silly games which we think are specially adapted for the childish mind can be directed with lasting benefit for the development of his *interests in intellectual activity and love of knowledge*. The child will learn to play at the game of knowledge-acquisition with the same ease, grace and interest as he is doing it now in his nursery-games and physical exercises.

Aristotle laid it down as a self-evident proposition that all Hellenes *love knowledge*. This was true of the national genius of the ancient Greeks. The love of wisdom is the pride of the ancient Greek in contradistinction to the barbarian who does not prize knowledge. We still belong to the barbarians. Our children, our pupils, our students have no love of knowledge. The ancient Greeks knew the value of a good education and understood its fundamental elements. They laid great stress on early education and they knew how to develop man's mental energies without fear of injury to the brain and physical constitution. The Greeks were not afraid of thought, because it might injure the brain. They were strong men and great thinkers.

Being yet in a barbaric stage, we are afraid of thought. We are under the erroneous belief that thinking, study causes nervousness and mental disorders. In my practice as a physician in nervous and mental diseases I can say without hesitation that I have not met a single case of nervous or mental trouble caused by too much thinking or overstudy. This is at present the opinion of the best psychopathologists. What produces nervousness is worry, emotional excitement and lack of interest in the work. But that is precisely what we do with our children. We do not take care to develop a love of knowledge in their early life for fear of brain injury, and then, when it is late to acquire the interest, we force them to study, and we cram them and feed them and stuff them like geese. What you often get is fatty degeneration of the mental liver. Our schools are so many cramming institutions.

If, however, you do not neglect the child between the second and third year, and see to it that the brain should not be starved, should have its proper function, like the rest of the bodily organs, by developing an interest of intellectual activity and love of knowledge, no forcing of the child to study is afterward requisite. The child will go on by himself,—he will derive intense enjoyment from his intellectual activity, as he does from his games and physical exercise. The child will be stronger, healthier, sturdier than the present average child with its purely animal activities and total neglect of brain-function. His physical and mental development will go apace. He will not be a barbarian with animal proclivities and a strong distaste for knowledge and mental enjoyment, but he will be a strong, healthy, thinking *man*.

Besides, many a mental trouble will be prevented in adult-life. The child will acquire knowledge with the same ease as he learns to ride the bicycle or play ball. By the tenth year, without almost any effort, the child will acquire the knowledge which at present the best college-graduate obtains with infinite labor and pain. That this can be accomplished I can say with authority; I know it as a fact from my own experience with child-life.

From an economical standpoint alone, think of the saving it would insure for society. Consider the fact that our children spend nearly eight years in the common school, studying spelling and arithmetic, and do not know them when they graduate! Think of the eight years of waste of school buildings and salaries for the teaching force. However, our real object is not economy, but the development of a strong, healthy, great race of genius.

We do not appreciate the genius harbored in the average child, and we let it lie fallow. We are mentally poor, not because we lack riches, but because we do not know how to use the wealth of mines, the hidden treasures, the now-inaccessible mental powers which we possess.

In speaking of our mental capacities Francis Galton, I think, says that we are in relation to the ancient Greeks what the Bushmen and Hottentots are in relation to us. Galton and many other learned men regard the modern European races as inferior to the Hellenic race. They are wrong, and I know from experience that they are wrong. It rests in our hands either to remain inferior barbarians or to rival and even surpass in brilliancy the genius of the ancient Hellenes. We can develop into a great race by the proper education of man's genius.

One other important point claims our attention in the process of education of man's genius. We must immunize our children against mental microbes, as we vaccinate them against small-pox. *The cultivation of critical judgment and the knowledge of evil are two powerful constituents that form the antitoxin for the neutralization of the virulent toxins produced by mental microbes.* At the same time we should not neglect proper conditions of mental hygiene. We should not people the child's mind with ghost-stories, with absurd beliefs in the supernatural, and with articles of creed charged with brimstone and pitch from the bowels of hell. *We must guard the child against all evil fears, superstitions, morbid prejudices and credulity.* We should counteract the baneful influences of the pathogenic, pestiferous, mental microbes which now infest our social air, since the child, not having yet formed the antitoxin of critical judgment and knowledge of evil, has not the power of resisting mental infection, and is thus very susceptible to mental contagion on account of his extreme suggestibility. The cultivation of credulity, the absence of critical judgment and of recognition of evil, with consequent increase of suggestibility, make man an easy prey to all kinds of social delusions, mental epidemics, religious crazes, financial manias, and political plagues which have been the baleful pest of aggregate humanity in all ages.

The immunization of children, the development of resistance to mental germs, whether moral, immoral or religious, can only be effected by the medical man with a psychological and psychopathological training. Just as science, philosophy and art have gradually passed out of the control of the priest, so now we find that the control of mental and moral life is gradually passing away from under the influence of the church into the hands of the medical psychopathologist. The physical life of the nation is now gradually being regulated by medical science with a consequent decrease of disease and mortality. Gradually and slowly the school begins to feel the need of medical advice, both

as to the health of the pupils and their more efficient training. Gradually the medical man assumes the responsibility of guiding the teacher and telling him why the pupils are defective in their studies and why the pedantic methods of academic pedagogy are arid and sterile. In some cases the doctor actually undertakes the training of the young. Thus the Italian doctor, Maria Montessori, from the education of defective children has finally undertaken, with immense, almost phenomenal, success, the training and education of normal children. As we look forward into the future we begin to see that the school is coming under the control of the medical man. The medical man free from superstitions and prejudices, possessed of the science of mind and body, is to assume in the future the supervision of the education of the nation. The schoolmaster and the schoolmarm with their narrow-minded, pedantic pseudogogics are gradually losing prestige and passing away, while the medical man alone is able to cope with the serious threatening danger of national mental degeneration. Just as the medical profession now saves the nation from physical degeneration and works for the physical regeneration of the body-politic, so will the medical profession of the future assume the duty of saving the nation from mental and moral decline, from degeneration into a people of fear-possessed, mind-racked psychopathics and neurotics, with broken wills and crushed individualities on the one hand, accompanied, on the other hand, by the still worse affliction and incurable malady of a self-contented mediocrity and a hopeless, Chinese philistinism.

There are in the United States about a couple of hundred thousand insane, while the victims of psychopathic, mental maladies may be counted by the millions. Insanity can be greatly alleviated, but much, if not all, of that psychopathic mental misery known as functional mental disease is entirely preventable. It is the result of our pitiful, wretched, brain-starving, mind-crippling methods of education.

In my work of mental and nervous diseases I become more and more convinced of the preponderant influence of early childhood in the causation of psychopathic mental maladies. *Most, in fact all, of those functional mental diseases originate in early childhood.* A couple of concrete cases will perhaps best illustrate my point:—

The patient is a young man of 26. He suffers from intense melancholic depression, often amounting to agony. He is possessed by the fear of having committed the unpardonable sin. He thinks that he is damned to suffer tortures in hell for all eternity. I cannot go here into the details of the case, but an examination of the patient by the hypnoidal state clearly traced his present condition to the influence of an old woman, a Sunday-school teacher, who infected him with those virulent germs in his very early childhood, about the age of five. Let me read to you a paragraph from the patient's own account: "It is difficult to place the beginning of my abnormal fear. It certainly originated from doctrines of hell which I heard in early childhood, particularly from a rather ignorant elderly woman who taught Sunday school. My early religious thought was chiefly concerned with the direful eternity of torture that might be awaiting me, if I was not good enough to be saved."

Another patient of mine, a clergyman's wife, was extremely nervous, depressed, and suffered from insomnia, from nightmares, from panophobia, general fear, dread of the unknown, from claustrophobia, fear of remaining alone, fear of darkness and numerous other fears and insistent ideas, into the details of which I cannot go here. By means of the hypnoidal state the symptoms were traced to impressions of early childhood, when, at the age of five, the patient was suddenly confronted by a maniacal woman. The child was greatly frightened, and since that time she became possessed by the fear of insanity. When the patient gave birth to her child, she was afraid the child would become insane; many a time she even had a feeling that the child *was* insane. Thus the fear of insanity is traced to an experience of early childhood, an experience which, having become subconscious, is manifesting itself persistently in the patient's consciousness.

The patient's parents were very religious, and the child was brought up not only in the fear of God, but also in the fear of hell and the devil. Being sensitive and imaginative, the devils of the gospel were to her stern realities. She had a firm belief in "diabolical possessions" and "unclean spirits;" the legend of Jesus exorcising in the country of the Gadarenes unclean spirits whose name is legion, was to her a tangible reality. She was brought up on brimstone and pitch, with everlasting fires of the "bottomless pit" for sinners and unbelievers. In the hypnoidal state she clearly remembered the preacher who used every Sunday to give her the horrors by his picturesque descriptions of the tortures of the "bottomless pit." She was in anguish over the unsolved question: "Do little sinner-girls go to hell?" This fear of hell made the little girl feel depressed and miserable and poisoned many a cheerful moment of her life.

What a lasting effect and what a melancholy gloom this fear of ghosts and of unclean spirits of the bottomless pit produced on this young life may be judged from the following facts: When the patient was about 11 years old, a young girl, a friend of hers, having noticed the patient's fear of ghosts, played on her one of those silly, practical jokes, the effect of which on sensitive natures are often disastrous and lasting. The girl disguised herself as a ghost in a white sheet and appeared to the patient who was just on the point of falling asleep. The child shrieked in terror and fainted. Since that time the patient suffered from nightmares and was mortally afraid to sleep alone; she passed many a night in a state of excitement, frenzied with the fear of apparitions and ghosts.

When about the age of 17, she apparently freed herself from the belief in ghosts and unclean powers. But the fear acquired in her childhood did not lapse; it persisted subconsciously and manifested itself in the form of uncontrollable fears. She was afraid to remain alone in a room, especially in the evening. Thus, once when she had to go upstairs alone to pack her trunks, a gauzy garment called forth the experience of her ghost-fright; she had the illusion of seeing a ghost, and fell fainting to the floor. Unless specially treated, fears acquired in childhood last through life.

"Every ugly thing," says Mosso, the great Italian physiologist, "told to

the child, every shock, every fright given him, will remain like minute splinters in the flesh, to torture him all his life long.

"An old soldier whom I asked what his greatest fears had been, answered me thus: 'I have only had one, but it pursues me still. I am nearly 70 years old; I have looked death in the face I do not know how many times; I have never lost heart in any danger, but when I pass a little old church in the shades of the forest, or a deserted chapel in the mountains, I always remember a neglected oratory in my native village, and I shiver and look around, as though seeking the corpse of a murdered man which I once saw carried into it when a child, and with which an old servant wanted to shut me up to make me good.' " Here, too, subconscious experiences have persisted throughout lifetime.

Ladies and gentlemen, as fathers and mothers, as teachers, you keep in your hands the fate of the young generation. You are conscious of the great responsibility of the vast, important work with which you are entrusted. For, according to the character of the training and education given to the young, they may be made a sickly host of nervous wrecks and miserable wretches; or they may be formed into a narrow-minded, bigoted, mediocre crowd of self-contented "cultured" philistines, bat-blind to evil; or they may be made a *great race of geniuses* with powers of rational control of their latent, potential reserve-energy. The choice remains with you!

MIXED INFECTION IN TUBERCULOSIS AND ITS TREATMENT.*

By JAMES K. YOUNG, M.D.,

Associate Professor of Orthopædic Surgery in the University of Pennsylvania,
PHILADELPHIA, PA.

Introduction.—The infection of the collections of pus which occur in tubercular bone and joint diseases produces the same constitutional conditions and is as much dreaded by surgeons today as it was in the time of Abernethy. The collections of fluid or cold abscesses which form under these conditions frequently remain sterile for long periods until they become infected with pyogenic germs. It is this infection which constitutes mixed infection in tuberculosis. As soon as infection occurs the constitutional symptoms become apparent, their nature depending upon the character of the germ and whether or not it remains local or invades the circulation. The infection may take place from within or it may occur after the abscess has been opened or bursts spontaneously. When the condition is local and the infection is confined to the sinus and abscess cavity the constitutional symptoms are not so marked and we have a *sapræmia*.

Sapræmia.—The general symptoms are those of gradual progressive ptomaine poisoning. The sinus becomes filled with a foul discharge and gangrenous

* Read before the Germantown Branch of the Philadelphia County Medical Society, July, 1910.

sloughing tissue. There is headache, loss of appetite, chilliness and malaise, with evening temperature. If the condition is not relieved, nausea and vomiting, diarrhoea, leucocytosis, fever, rapid pulse, dry furred tongue, and scanty urine occur. If it is not later arrested the nervous system is overwhelmed by the poison, and restlessness, delirium, coma, with dilated pupils, pale, cold skin, feeble, irregular pulse, diarrhoea and vomiting usher in a fatal termination.

Septicæmia.—When bacteria find entrance into the blood we have a true septicæmia which is variously designated as a bacteriæmia, toxæmia, pyosepticæmia, toxinæmia, etc. Constitutional symptoms are much the same, but more rapid and severe, and there is added albuminuria with casts, jaundice, skin eruptions, and marked blood changes; bacteria are recognized in the blood, the condition terminating in a pyæmia. In the infections occurring in tuberculosis all forms and degrees are seen from sapræmia to pyæmia, but the most frequent forms and those admitting of the best results in treatment are the mixed infections where there is a polyinfection from the presence of staphylococcus, streptococcus, *B. coli communis*, *proteus vulgaris* and *pyocyaneus* in varying combinations in the wounds, and where the absorption of the toxins has produced a constitutional condition. When bacteria are actually present in the blood it is questionable, as pointed out by Bergey, whether treatment by bacterins is valuable, although I am acquainted with an exception.

Bacteria found in Abscesses and Sinuses.—With the increasing study of this subject a larger number of bacteria are being found. In the examination of a number of abscesses before operation by the writer by means of a fine hypodermic syringe and culture, about half of the cases were found to be sterile and the remainder showed the presence of staphylococcus, streptococcus, pneumococcus and other forms of diplococcus. In the examination of discharging sinuses by Bergey there was found present an unusual number of the pseudodiphtheria form, which is probably a pyogenic organism. Among the rare and unique organisms found affecting the joints may be mentioned the bacillus of hog cholera, which was seen in a case of elbow-joint disease with Dr. Morris Boothe Miller at the Polyclinic, and the fungus of actinomycosis as in the case reported by the writer in which the vertebræ and ribs of a patient at the University Hospital were involved.

Diseases Mistaken for Tuberculosis.—A good many diseases are mistaken for tuberculosis of the bones and joints, and among these may be mentioned osteomyelitis, syphilis, septic infection of the joints, especially epiphysitis, actinomycosis, and arthritis deformans in adolescence.

Treatment.—The treatment of mixed infection in tuberculosis has been greatly improved of late by the introduction of the so-called *bacterin treatment*. Before resorting to the use of this method all medical and hygienic measures should be employed, and it should be preceded by any operative treatment that is required, the cleaning out of the sinuses and the treatment of the sinuses in different ways. The treatment by means of bacterin consists of the introduction by hypodermic medication of dead bacteria in order to increase the resistance of the white blood-corpuscles to the pus organisms in the wound. Before resorting to it the opsonic index should be taken, wherever possible, according

to the method of Wright; it should also be repeated from time to time throughout the treatment. There is a growing tendency at the present time to depend upon the clinical symptoms as a test for the effect of the bacterins on the patient, on account of the expense and trouble of taking the opsonic index, but wherever possible the opsonic index should be used. There are two methods of employing the bacterins. One is to make a preparation from the wound itself, which is known as the autogenous method, and the other is to use stock preparations as furnished by manufacturers of pharmaceutical preparations. Wherever possible it is best to use the autogenous preparations, and, where more than one germ is present, preparations should be made from each one of the germs and used, either separately or in combination. In this way I have had treated in all from 25 to 30 cases, and I am able now to determine which are suitable and which are not suitable cases for the treatment. The most suitable cases are those in which there has not occurred any true septicæmia, but where the patient is suffering from the absorption of poisons from the wound itself. The following case is a good illustration:—

Ernest J. Aged 21 years. Suffering from hip abscess. The abscess was incised and subsequently became infected. Examination of the fluid from the sinus showed the presence of staphylococcus pyogenes aureus. An autogenous preparation was made from the culture and two injections were given at an interval of three days. The character of the constitutional symptoms at once changed and the discharge from the wound became serous. He was able to leave the hospital at the end of a week. Under no other form of treatment could this have been accomplished.

Another suitable case is the following:—

T. B. H., Jr. Aged 6 years. Suffering from spine disease with a large lumbar abscess which was not operated upon and which subsequently became infected with the staphylococcus, colon bacillus and proteus vulgaris. He showed all the constitutional symptoms of septicæmia, but germs were not found in the blood. He was treated in alternate weeks with autogenous preparations of these organisms, and gradually improved until the present time, after an illness of two years. His pulse, temperature and respiration are normal.

The unsuitable cases are those in which septicæmia is actually present, or where as the result of septicæmia there has been injury to or disease of the internal organs,—kidneys, liver, spleen, etc. A good example of these is the following:—

E. J. Aged 6 years. Suffering from spine disease with a large psoas abscess which extended down the thigh. Following operation the abscess cavity and sinus became infected with staphylococcus and streptococcus and the suppuration continued for a long time, producing amyloid changes in the internal organs. From time to time he has been treated with autogenous preparations of the bacteria, but no apparent effect has been produced upon the general condition except for a slight improvement in his blood-count and general appearance.

Another unsuitable case is the following:—

J. R. Aged 38 years. Suffering from a large scapular abscess extending down to the lumbar regions. Cultures showed the presence of staphylococcus, but the clinical symptoms and microscopical appearances were not characteristic of tuberculosis. While waiting for the results of the animal inoculations, as the index was low injections

of autogenous preparation of staphylococcus were given. There was no improvement in the index and the constitutional symptoms were not improved. It was found subsequently that the patient was suffering from ray-fungus disease.

The treatment of these cases by the combined use of bacterins and tuberculins has also been tried. Only two patients have been treated in this way, because of the long time required—a year and a half to two years—for the treatment with tuberculin, few patients remaining under observation in general hospitals for so long a period. The bacterins and tuberculin may be given in combination or used in alternate weeks. Prolonged use of these preparations is not always necessary. The best results are often obtained by two or three injections, sufficient to bring up the opsonic index to its proper point.

Conclusions.—1. In using the bacterin treatment any operations required for the relief of confined pus should be performed at once.

2. Always take the opsonic index where possible.

3. Always use autogenous preparations when they can be obtained.

4. Always begin with moderate doses.

5. Bacterin treatment is not often satisfactory where septicæmia is present.

6. The treatment of tuberculosis by tuberculins is of some value, but its value cannot be exactly determined at the present time.

THE TREATMENT OF "PARASYPHILIS" OF THE NERVOUS SYSTEM IN THE LIGHT OF RECENT RESEARCH: PARESIS AND TABES DORSALIS.*

By TOM A. WILLIAMS, M.B., C.M. Edin.,

Memb. Corresp. Soc. de Neurol. de Paris; Memb. Corresp. Soc. de Psychol. de Paris;
Memb. Assoc. de la Soc. de Méd. Ment. Clin.; Neurologist to the Epiphany Dispensary,

WASHINGTON, D. C.

Status of the Question.—Incurability by specifics has been regarded as one of the main characteristics of the quaternary manifestations of syphilis, paresis, tabes dorsalis, leukoplakia, etc. This was not only the dictum of alienists, to whom patients went after disintegration of the nervous system, but syphilographers of the eminence of Fournier¹ acquiesced in this verdict of pessimism. So the matter rested, with an occasional dissentient voice, until the pathological studies of Nageotte² clearly showed the directly syphilitic nature of taboparesis, and stimulated, especially in France, trials of mercurial medication in cases of tabes dorsalis. In spite of occasional successes, it was to only a few that the valency of this therapeutics appealed; until, as it seems only yesterday, the Bordet-Gengou³ principle was so brilliantly applied in the hands of Wassermann,⁴ and showed unequivocally the pathogeny of the once-called metasypilis. The data of Wassermann, Plaut⁵ and others further

* Read at the Eleventh Annual Meeting of the American Therapeutic Society, held in Washington, D. C., May 5, 6 and 7, 1910.

stimulated inquiry into the relationship between complement deviation and antisyphilitic medication in so many cases of tabes and paresis and into its success in a number of others.

Up to the present, there is much difference of opinion about the influence of mercury upon the Wassermann reaction. A factor in the settlement of this would seem to be the absence of the reaction which sometimes does not take place in the fulminating cases, though it occurs in practically every parietic. Müller,⁶ of Vienna, Eichelberg,⁷ and others believe that as an index to treatment the reaction is of little value, and that its absence should not make us cease intermittent medication. There is, however, a tendency to look upon the test as a guide to continuance of treatment; which it cannot pretend to be, judging from the data so far presented. In France, the test is not even regarded as a specific one,⁸ although recently Flashman and Bullock⁹ have made a strong plea that it be so regarded.

It is curious that latent syphilis sometimes lights up apparently as a direct result of mercury. The only valid explanations so far adduced seem to be, on the one hand, the stimulation of the spirochæta by the inimical substance, mercury, and, on the other hand, perhaps, the interference with antibody production by the same agent in certain individuals. Some pharmacologists, on the contrary, believe that the real manner of action both of mercury and of the iodides is their effect as stimuli of the defense-mechanism of the body. As regards mercury at least, this explanation would appear to be contradicted by Metchnikoff and Roux's¹⁰ experiments on apes, whereby they prevented infection by calomel ointment applied within twenty-four hours of the access of the virus to the mucous membrane. The repetition of this upon his own person by Mazenove¹¹ showed its applicability to human beings, and that this is not an exceptional case is proved by the results of the prophylaxis now adopted in the American navy,¹² namely, that every man on his return from shore-leave is given the opportunity of a toilet of which mercurial inunction of the glans forms a part. When we realize the powerful germicidal effect of mercurial preparations, it would require stronger evidence than we have at present to warrant the conclusion that the internal secretions play a material part in what appears to be a destruction of the spirochæta before it has reached the submucous tissue.

These considerations have an important bearing upon the meaning of mercurial medications; for it must be remembered that our forebears numbered mercury among the deobstruents, by which term they described substances which facilitate the disappearance of hyperplasia of all kinds. The most powerful bodies of this class are, of course, the iodides, and it is to this function of these latter that we now attribute their usefulness in gummatous affections. It is not believed that their germicidal or antitoxic power is considerable as regards the spirochætæ, and their use in syphilis, even in the tertiary stage, is relegated on the continent of Europe to a strictly secondary place. In this notion the influence of Jonathan Hutchinson has prevented acquiescence on the part of English-speaking physicians; but latterly, even here, mercury is becoming more and more recognized as the paramount drug, even against tertiary lesions. This being the case, is mercury not applicable to the late

tertiary manifestations of syphilis? Here I can speak only of that part of the body to which in recent years my therapeutics has been confined, the nervous system. As it is facts which count when a classical doctrine is assailed, I cannot do better than present to you the summary of a few cases of quaternary syphilis of the nervous system successfully treated by mercury. I shall present only seven, and, lest you should suppose that I am alone in this opinion, three of these cases will be selected from the experience of Charles Dana,¹³ the eminent neurologist of New York, and another from the work of Vincent,¹⁴ a pupil of Babinski and Nageotte, whose work upon tabes has so clarified our conceptions of the pathogenesis and treatment of that disease.¹⁵

CASE 1.¹⁶—Man, aged 40, referred May, 1908, by Dr. Lewis L. Taylor for a severe nervous breakdown following "indigestion" for five years.

Previous History.—Moderate smoker and rarely took alcohol; had given up coffee. Eats well. Single from choice. No sexual excesses. Infected twenty years before. Since nine years has felt useless and depressed, almost wanting to die. Attacks of desperate desire to flee. Since two years, dyspnoic and sinking feelings, occurring suddenly without external cause, light feelings in the chest, thumpings in the heart. Nervous chills with tremor, crying spells, voice tremulous and uncertain. For a year and a half had given up his bank, and taken up out-of-doors soliciting; during which time he had gained ten pounds.

Examination.—Foul breath, thickly furred tongue; circulation, respiration and urinary functions normal.

Nervous System.—Deep reflexes all exaggerated; the triceps, patellar, Achilles and deltoid unequal on the two sides. The cutaneous reflexes, including the plantar, diminished. Pupils react normally.

Motility deficient in the left forehead; trembling of left cheek, of tongue and right fingers. Adduction of right thigh imperfect. The left heel left the floor while he sat up from recumbency. *Sensibility* unimpaired.

Psychic Functions.—Memory not impaired; perception clear; calculation slow and imperfect.

Treatment.—He was given a mercurial course during seven weeks, when he went to the mountains with all the symptoms vastly improved. He was then able to do office work without fatigue or irritability. In October a second course was given, and he could now stand the pain of mercurial cream injections once a week. He has since then remained well. I should add that a very careful régime and a restriction of the proteids in the food were instituted.

CASE 2.¹⁷—Man, aged 54, seen with Drs. Prentiss and Main on account of a "neurasthenic state," present six months, which rest, change and a sea voyage had benefited only slightly and temporarily. His complaints were insomnia, irritability and a state of suffering and incapacity; had been subject to hardly noticeable depressions and exaltations every few years. He has no children.

Examination.—In spite of cold weather, an abundant sudorrhœa of both axillæ and the internal border of the left arm; less abundant on the left leg.

Motility strong; no tremor of tongue, face or eyes; but the right platysma trembles, and there is a rhythmical tremor of the arm.

Sensibility.—A zone corresponding to fifth lumbar and first sacral roots insensible to vibrations.

Reflexes uneven, that of the right knee being diminished and the abdominal and right plantar almost absent. Pupils irregular, and the light reflex imperfectly maintained. The speech is slightly drawling, and a word or letter occasionally stuttered over.

Psychic Functions.—Memory slightly below normal; calculation slightly imperfect.

During the first examination, his insight seemed impaired, as he was quite indifferent. He declared that his lack of interest ensues upon peculiar abdominal feelings, like the sensation after a debauch, followed by a sinking feeling and misery.

Treatment.—He was at once given mercurial injections, and a few days later the examination was continued, and showed him to be incapable of detecting the glaring impossibilities depicted in some drawings I use for the purpose.¹³ His steady improvement was interrupted only once by an error of diet. After five months of hard work on a farm he began to feel nervous again; but another course of mercury arrested the symptoms. Six months later some unusually hard work caused another relapse; but I believe that a short rest will restore him completely.

CASE 3.¹³—Man, aged 40. Was infected before he was twenty. Had ideas of power and self-reproach, later a distinct melancholia. The pupils were unequal. Left knee-jerk was lively; the right weak. He had tremor of hands, but none of the face. He suffered from insomnia; no headaches, no cranial nerve palsies except those of the eyes. In six months he was practically well.

CASE 4.¹³—Man, aged 37. Infected twelve years before. The pains and paresthesias extended down the back of the neck and shoulders. He was depressed, his memory poor, his speech syllabic. He had no tremor, and the pupils and knee-jerks were normal. He had at times some brief illusions, but no hallucinations. He was sent to a sanitarium for several months. Since that time, a period of four years, he has continued well.

CASE 5.¹³—Man, aged 46. He had syphilis at twenty-three, and received treatment. At thirty-four he had some mental depression and rheumatic pains. He was relieved by hypodermatic treatment with mercurials. He married at thirty-seven and had a healthy child. At forty-six he had nervous attacks consisting of agitation and trembling, and he had suffered from dyspepsia. He also had had an "anxious depression," or mild form of hypochondriacal melancholia, which did not keep him from work. No objective symptoms. He gradually recovered, but a year later complained of entire loss of sexual power, failure of memory, difficulty in concentration at work, and dyspeptic symptoms. At the end of a year he was well except for sexual weakness. No symptoms of tabes. From the age of thirty-four to forty-six he took mercury by subcutaneous injection; at first every two weeks for two years. These injections acted as a tonic, the effect lasting for two weeks. Later he took the treatment at much longer intervals.¹⁶

CASE 6.—That of a physician who was seen three years ago by an eminent ophthalmologist on account of diplopia, and unfortunately our distinguished colleague did not ascertain the cause, but merely prescribed glasses to remedy its effect. Some months later a severe nervous breakdown and peculiar conduct with dementia led to a unanimous diagnosis of paresis by Drs. Starr, Dercum and Brush. I had occasion to see him while visiting another patient in the sanitarium where he was and strongly urged upon the director the trial of mercury, although the patient had been confined there for nearly a year, and was quite defective. The result was that before six months the active manifestations ceased, and the patient became quiet and able to perform a considerable amount of ordinary work. Owing, however, to the long-continued destruction of cerebral tissue, his intelligence lacked its former capacity, and he was somewhat childish in his judgments one year after the commencement of treatment. Now, this case is not adduced as an example to follow, but merely as an instance of the influence of mercury over parasyphilis of the brain, even though considerable dementia is present. We should aim at early diagnosis, which in my first two cases and those of Dana led to a practically complete restoration to health.

The *technique* is of the greatest importance, if injections are not to be discredited as a procedure. A full consideration of this subject may be found in the monograph of Levy-Bing (Paris, 1909). I shall only indicate my own method.

For both soluble and insoluble preparations, I find that a needle of platinum-iridium (about 2 c.c. to 3 c.c.) is sufficient, and I use the Luer all-glass syringe. In both cases the injection must be made deep into a muscle, preferably the gluteus maximus, although some therapeutists prefer the deltoid. The crural muscles, and in fact all those of the limbs, seem to be intolerant of the injections. The superior and outer third of the buttock is the place where one is most certain to avoid large blood-vessels and the sciatic nerve. Levy-Bing fixes the place of election by dropping a perpendicular to bisect a line joining the anterior superior spine of the ilium with the summit of the intergluteal fold. Within 3 c.c. of this center he places every injection, dividing the imaginary circle into quadrants, into which he injects by turn. Another rule is to place all the injections within a transverse zone one inch above the trochanter and one inch below the iliac crest. The injections are given in alternate buttocks, into the inner, middle and lateral segments of each horizontal zone in turn until twelve injections have been given.

Frequency and Dosage of the Injections.—Insoluble preparations are absorbed slowly, so that large quantities can be given at long intervals. One grain once a week is an average dose, which in many instances may have to be exceeded, either by increasing the quantity or shortening the interval. This is the method used by Colonel Lambson with great success in the British army. A good deal of pain occurs for a day or two after the injection, so that the method is not always applicable in practice. An emulsion of mercury in a combination of hydrous wool-fat or palmitine has proved the least painful, but calomel has a more powerful therapeutic effect. Of the soluble preparations, corrosive mercuric chloride is the easiest to prepare, and in my hands has not given rise to any considerable pain; but the French writers prefer mercuric benzoate or iodide. The dose of either of these is about 2 cg., upward, and of the bichloride, about half this. I have had no experience with the cacodylates; for the accidents which have been reported after their use have made me unwilling to try them. Whichever preparation is selected, it must be injected deeply into muscular tissue, in a solution of about $\frac{1}{2}$ per cent. I need not insist upon the precautions of asepsis of hands, instruments and patients. Some twenty to thirty injections should be given at the beginning of the treatment; then two weeks of interval should be allowed, followed by another series of twenty or more injections. Finally a series of six weekly insoluble injections may be given four times a year.

Jonathan Hutchinson is an advocate of the continuous administration of mercury, as against the intermittent method advocated more especially by Fournier. As we do not know the rationale of mercurial medication, only experience can determine which is the preferable plan, but the quantitative estimation of therapeutic experience is notoriously uncertain and takes a long time to effect a decision. Accordingly, an analogy must be sought until further data can be accumulated. Perhaps the best is the action of quinine against the plasmodium malarie, and here experience has shown that the drug should be given in such a way that the content of the blood should be highest during the efflorescence of the parasite. Now, both the trophonema and the spirochæta are

animal organisms, and many pathologists believe that spirochætæ undergo a cycle of development. Close clinical study may reveal symptomatic variations attendant upon different phases of the spirochæta's development, in correspondence perhaps with metabolic oscillations of its host, or perhaps independently of these. By trial we may find during which of these phases mercury produces its maximum effect against the parasite, and, if we succeed in finding this, much mercurialization will be saved our patients in the future, in the same way as cinchonism is at the present time reduced to a minimum while treating malaria. At present, both the intermittent and continuous methods aim at prolonged saturation with mercury, so that during this medication a spirochæta will always meet with an antagonist, whenever its susceptible phase may occur; but, to effect this, it is necessary to add greatly to the demand upon the renal function, and to disturb metabolism with mercury, for weeks at a time.

If experiments show these considerations to have a basis in fact, there will be only one way to exhibit mercury, and that will be directly into the circulation by injection through a vein. Even now there are many advocates of this as the method of election in ordinary cases and all who have tried it are agreed as to its superiority in the fulminating case. Thus, Froguet,¹⁹ in Abadie's clinic, has given eight thousand such injections in cases of tertiary and quaternary ocular syphilis, such as incipient optic atrophy, paresis of the ocular muscles. A striking case is that reported by Vincent and quoted by the writer in his article on the "Pathological Prodromes of Taboparesis:"²⁰

CASE 7.—A man, aged 24, had syphilis, without secondary symptoms, in 1904. He commenced using gray oil from the time he saw the chancre, treating himself, but soon ceased on account of the pain, and substituted a daily dose of 10 centigrammes of mercuric iodide. This he continued for three years. Then, believing himself cured, he married. Twenty-seven months after the chancre, however, headache began, and this lasted almost continuously for eight months. Though worse at night, it was thought in turn to be influenzal, neurasthenic and neuralgic. On examination, no signs of organic nervous disease were discovered, but punctures showed an enormous lymphocytosis, such as appears in the most active cases of general paralysis. Indeed, the diagnosis could have been made with the naked eye, the liquid showing a peculiar opalescence characteristic of an abundance of cells. In addition to the usual cells, there were some of the polynuclear and eosinophile varieties and also some plasma cells. He was at once treated by intravenous injections of mercuric cyanide every other day, to the number of thirty in all. The headache quickly disappeared; but he was then given six injections of gray oil and four series of six injections each of emulsified calomel. He might have been considered as cured but for the appearance of a pharyngeal gumma, six months later, and for the persistence of the intense meningitis shown by the lymphocytosis.

Wernick,²¹ of Los Angeles, treats all syphilitics by the method mentioned.

*The Prognosis.*²²—Two factors must be estimated in this: First, arrest of the disease. If the constitutional state is not grossly impaired, this can generally be accomplished. Second, restoration of functional capacity. The cause of tabes is a luetic leptomeningitis, as is indicated by the increased cellular content of the cerebrospinal fluid. This implicates the spinal roots and once the fibers of these are destroyed regeneration of those within the spinal cord can never occur. Their function is lost forever, although it may be compensated

for in part by those fibers which remain. Hence the supreme importance of diagnosing²³ the prodromes of taboparesis. Long before there is locomotor ataxia, loss of the knee-jerk, and pupillary rigidity the disease should be suspected from the *modifications of the sensibility*, such as the twinges of pain so often mis-called rheumatism. Still more often mistaken are the paræsthesiæ, itching, burning, tingling, dull, numb feeling, etc. Irritable bladder is frequently treated for months by urologists as cystitis, when its real cause is inflammation of the spinal roots, the prodrome of tabes. Genital irregularities are another source of mistakes. It is unfortunate that the neurologist is so seldom given the chance to see a patient whose disease declares itself in any of the above ways, but the gastric crises should be so well known that there can be no excuse for the frequency with which gastroenterostomy is performed through an error of diagnosis. Other pretabetic manifestations often overlooked are nervous diarrhœa, tenesmus, laryngeal cough, and chronic aortitis; while paralytic strabismus and other palsies, although common enough, are less unlikely to receive neurological advice, and hence give the patient an earlier chance of the diagnosis which may lead to the arrest of his disease before the disablement of some organ.

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DISCUSSION.

Dr. Fisher said that too much emphasis could not be laid upon the desirability of an early and correct diagnosis. He had several times discussed with Dr. Dana the cases of the latter which had been cited by Dr. Williams. In most of them there is

some ground for a difference of opinion as to the correctness of the diagnosis, as the cases were in such an early stage of the disease. The most difficult point is to make a differential diagnosis between general paresis and cerebral syphilis. Both give rise to a similar set of symptoms. Cerebral syphilis, however, is responsive to treatment. Many of the cases could and would go on to general paresis unless they received proper treatment, and then we are not apt to get the good results from treatment which could have been obtained in the early stages, so far as a cure is concerned. Can we relieve the symptoms in well-advanced cases? He believed that we can, in spite of the opinion of some clinicians that the iodides do no good in these cases, and that they may even cause, or hasten, optic atrophy. He was convinced that their use is followed by beneficial effects in many cases. The tonic effects of mercurial injections were well illustrated in an advanced case of tabes which came under his observation. The gastric crises recurred at least once a month and sometimes two or three times a month, or even more frequently, and morphine had to be given to the point of causing a habit. Mercurial injections in this case did great good. In general it can be said that the results in tabes and paresis depend largely upon the treatment which the patient received when the disease was in its early stages.

Dr. Williams said that the essential importance of the general hygienic management of patients who are taking mercury was not sufficiently appreciated. A patient whom he was treating with mercury began to do badly, although he appeared to be carrying out the treatment faithfully. An investigation showed that he had not been following the directions with regard to diet; he had been eating too much meat at night. When the diet was properly regulated all went well again. He was gratified that Dr. Fisher had corroborated his views as to the value of early diagnosis in these cases. Only with this can the best results be obtained.

EYE SYMPTOMS AS AN AID IN THE DIAGNOSIS OF ORGANIC AND FUNCTIONAL NERVOUS DISEASES.*

By ALFRED GORDON, M.D.,

Associate Member of the Société Médico-Psychologique, Paris, France; Neurologist to the Mount Sinai, Northwestern General and Douglass Memorial Hospitals,

PHILADELPHIA, PA.

THE relationship of the eye to certain visceral diseases and particularly to diseases of the nervous system is an important one. Failure of recognition of this truth may lead to erroneous diagnoses and consequently to wrongly directed therapeutics. The neurologist cannot dispense with the services of the ophthalmologist, neither can the latter form an opinion of his cases without the aid of the neurologist. The knowledge of eye changes is indispensable to every internist, not alone to the specialist in nervous diseases. In some cases the objective symptoms are so slight that an examination of the eyes will decide the diagnosis of the case. In other instances the eye changes are only corroborative of other findings in the body. A brief review of various ocular conditions will illustrate these points.

A. *Palsies of Ocular Muscles*.—Apart from purely local causes, such as traumata, a sudden onset of a paralysis of one muscle or a simultaneous involve-

* Résumé of an address delivered before the Northwestern General Hospital Medical Society, January 17, 1910.

ment of several muscles suggests syphilis of the nervous system. In *cerebro-spinal syphilis* strabismus, ptosis, a weakness or paresis of any of the muscles of the eye globe, are quite frequent phenomena. When such a patient presents some slight symptoms (motor or sensory), as for example changes in the reflexes, some vague sensory disturbances, occasional headaches, etc., a palsy of an ocular muscle will render considerable assistance in determining the nature of the condition. In well-marked cases of involvement of the central nervous system by syphilis the eye symptoms will be a corroborative factor.

Ocular palsies occur not infrequently in *meningitis*, especially in children. When in the course of an infectious disease the temperature ascends, delirium makes its appearance and an ocular palsy (usually strabismus) develops, the presumption is that the patient is developing meningitis. This symptom is particularly helpful when delirium is absent and other objective signs of meningeal irritation are not conspicuous.

Ocular palsies may be encountered also in *tabes* and in *paresis*, to speak only of the most important organic affections.

B. *Pupillary Symptoms*.—Disturbances of the reflexes of the pupil are extremely important for diagnostic purposes. The *Argyll-Robertson phenomenon*, which consists of loss of light reflex and preservation of accommodation and convergence, is one of the most frequent manifestations of *tabes*. Should a patient present vague or even very vague pain in the lower limbs and a slight or very slight decrease of the patellar tendon reflex, but a distinct Argyll-Robertson pupil, there can be no doubt that he is suffering from *tabes*. In some cases this phenomenon may exist with hardly perceptible symptoms of *tabes*. It may be therefore an initial symptom of this disease. It is consequently a sign which when looked for may render great service in making a diagnosis. In a great many cases of *tabes* the Achilles tendon reflex disappears before the knee-jerks. In such cases the presence of the Argyll-Robertson pupil will determine the diagnosis.

In *paretic dementia* disturbances of pupillary reflexes are quite frequent. The *consensual reflex* is frequently disturbed in *paresis* and in addition to other pupillary changes (*v. below*) is an early manifestation of this serious malady. This reflex consists of an inability of one pupil which has been shaded with a card to act in unison with its fellow which is being examined for light reflex.

Inequality of pupils, *irregularity* of pupils are met with in cerebrospinal syphilis and especially in *paresis*. In the latter disease very slight physical or mental changes may present difficulties in the diagnosis, but the presence of irregular and unequal pupils together with changes in the pupillary reflexes will facilitate considerably the determination of the condition and will increase the possibility of *paresis*. Of course, it is superfluous to dwell upon the fact that irregularities in the periphery of pupils may be the result of peripheral causes, such as attachments between the iris and the capsule of the lens (*synechiæ*). The latter should be excluded in making a diagnosis.

Very small pupils, so-called "pinpoint pupils," are very frequently encountered in *tabes* and in *paresis*, more in the former than in the latter. The

existence of such a state will enable one to direct his investigations toward other symptoms of either of these two maladies.

C. *Examination of the Eye-grounds* is of paramount importance in neurological work. Not a case in which an organic disease of the central nervous system is suspected should be dismissed without an ophthalmoscopic examination. In not a few instances a neurological diagnosis is made almost exclusively upon the ophthalmological findings. *Optic neuritis, optic atrophy, edema of the papillæ* (choked disk) are conditions found usually in organic diseases of the central nervous system. The first two lesions of the fundi are met with in *tabes, paresis* and in cases with intracranial pressure. In *tumors* of the brain when only general symptoms, such as headache and vertigo, are present, even with total absence of localizing symptoms in the limbs, the finding of serious changes in the fundi will, in the majority of instances, determine the diagnosis and lead to a proper surgical intervention. In other cases slight focal symptoms may be present and then the knowledge of the existence of optic neuritis or optic atrophy with a gradual decrease in the power of vision may promptly determine an intracranial pressure.

Optic neuritis or optic atrophy are frequently observed in *tabes, paresis* and *multiple sclerosis*, more in the former two than in the latter. Their presence will frequently decide the diagnosis when very few symptoms of the disease are present. There is a form of *tabes*, the "amaurotic form," in which profound changes in the fundi with loss of vision appear, first or as the earliest symptom. This fact is undoubtedly of great importance, as our diagnosis and prognosis depend exclusively upon it.

Choked disk or *papilloedema* is almost pathognomonic of *cerebellar disease*. In a recent case the patient complained of some headache; he also presented a diminution of one knee-jerk. The diagnosis was certainly difficult. Ophthalmoscopic examination made at short intervals revealed an *edema* of the *papillæ* and a gradual loss of vision. The diagnosis forced itself upon me. A prompt operation was performed and the results were most satisfactory. The *edematous* condition of the *papillæ* was gradually lost; vision improved considerably. The operation consisted of removal of a portion of the occipital bone, which relieved the *cerebellar* pressure. This case is sufficiently illustrative to emphasize the importance of ophthalmoscopic findings.

D. *Nystagmus* is a phenomenon which apart from local causes and possible congenital origin is often pathognomonic of *cerebellar disease*. It is also encountered in *disseminated sclerosis*. *Nystagmus* consists of oscillatory movements of the eyeballs. It is particularly observed in lateral movements of the eyes. In presence of mild symptoms of the above affections its occurrence is of assistance in making a diagnosis.

E. *Visual Fields*.—Contraction of the visual fields may be observed in intracranial diseases and particularly in functional nervous diseases. *Hysteria* especially claims its control over the visual fields. In this affection the latter are usually concentrically narrowed, sometimes to such an extent that the patient can perceive an object only when it is placed in front of the eye. In extreme cases the entire visual field may be obscured and the patient is unable

to see the object even when it is placed in front of the eye. This is the so-called "hysterical amblyopia." It is usually unilateral and on the side where other sensory disturbances, such as anæsthesia, analgesia, etc., are observed on the body. Contraction of the visual fields may also affect both eyes. It is usually present in conjunction with other hysterical manifestations. The latter, however, may be extremely few in number and very mild. In such cases the contraction of the visual fields is very important for the purpose of diagnosis and consequently of prognosis.

The visual fields may be altered in an entirely different manner and present a condition called hemianopsia.

F. Hemianopsia.—This consists of a blindness of the visual fields of both eyes either to the right or to the left, or else upward or downward. It may also affect both eyes in their intranasal or bitemporal portions.

Homonymous lateral hemianopsia indicates darkened visual fields of both eyes, either on the right or left. *Binasal or bitemporal hemianopsia* is also called *heteronymous hemianopsia*. Homonymous hemianopsia is an indication of a break in the continuity of the visual tract posterior to the optic chiasm and especially in the occipital lobe. Binasal hemianopsia implies a lesion on both sides of the chiasm. In bitemporal hemianopsia the lesion is in the middle of the chiasm (aneurism, tumor, fracture). In connection with homonymous hemianopsia there is a very important pupillary phenomenon which must be mentioned. This is "*Wernicke's pupillary symptom*." Given a case of hemianopsia, one eye being excluded, the eye under examination is suddenly illuminated; care must be taken that the light falls obliquely and is not diffused over the entire retina. If the light falling upon the blind side of the retina causes no contraction of the pupil, the lesion is in the portion of the visual pathway between the chiasm and the corpora quadrigemina. If the pupil responds to the beam of light, the lesion is further on,—back of the corpora quadrigemina. Wernicke's pupillary phenomenon is therefore of extraordinary importance in the localization of a lesion when a homonymous lateral hemianopsia is present.

The importance of such eye manifestations is too obvious to require emphasis.

Cushing, of Baltimore, has lately called attention to *reversed color fields* as being a frequent occurrence in cerebral neoplasms. Here again the aid that ophthalmology can render is immense.

The diseases of the nervous system, as we have seen from this rather brief review, cannot be properly diagnosed without an eye examination, which should always be made by a competent ophthalmologist. It is only through the combined efforts of both neurologist and ophthalmologist that a correct opinion can be formed of any given case in the as yet obscure field of the nervous system.

SKIN INUNCTION AS A THERAPEUTIC MEASURE: A CORRECTION.

IN the article by Dr. Lawrence F. Flick on the above subject which appeared in the MONTHLY CYCLOPÆDIA AND MEDICAL BULLETIN for August, 1910, the preparation "cresol iodid" is referred to a number of times in the text and in illustrative formulæ. Dr. Flick writes to inform us that the word "europphen" should have appeared in place of cresol iodid, which preparation, in addition to being at present unobtainable in this country, appears to be insoluble in oil, and, therefore, could not be used in the formulæ embodied in the article. The American Therapeutic Society, before which the paper was read, opposing through its by-laws the naming of any proprietary remedy in its published transactions, its Editor, in going over the paper presented for publication, had substituted for "europphen" the chemical name "cresol iodid," which is that of the most nearly related non-proprietary compound. We are requested by the author to publish the correct formulæ used by him for therapeutic inunction, in the form in which he had intended they should appear in the article:—

- | | | |
|----|----------------------------------|--------------|
| R | Europphen | 3ij. |
| | Ol. rosæ | gtt. ij. |
| | Ol. anisi, | |
| | Ol. gaultheriæ, of each | f3ij. |
| | Ol. olivæ | q. s ad f3v. |
| M. | Sig.: Rub into body as directed. | |
| R | Europphen | 3ij. |
| | Ol. anisi, | |
| | Ol. gaultheriæ, of each | f3ij. |
| M. | Sig.: Rub into body as directed. | |
| R | Europphen | 3ij. |
| | Ol. gaultheriæ | f3ij. |
| | Adip. lan. hydros. | 3iij. |
| M. | Sig.: Rub into body as directed. | |

Cyclopædia of Current literature

CHOREA, THYROID EXTRACT IN.

The case is reported of a girl, aged 10 years, who had shown marked choreic phenomena at frequent intervals for a period of three years. After ineffectual treatment successively with arsenic, saline aperients, nourishing and non-irritating diet, potassium iodide and bromide, salicylates and quinine, temporary improve-

ment occurred under the influence of brine baths. The condition having lately become worse than at any time before, a fluidextract of thyroid gland was ordered in teaspoonful doses twice daily. The child showed marked improvement and returned to school in the second week. The thyroid was continued for two months, with the dosage reduced to one

dram a day in the second month. At time of writing there were no signs of chorea, the improvement having been maintained for over nine months. P. A. Roden (*Lancet*, October 29, 1910).

DIABETES, THE DIET IN.

Individual conditions must be taken into account in regulating the diet of diabetics. The tolerance for carbohydrates, fats, alcohol, and proteids differs markedly, both as to quality and quantity, in different patients, and it is only by a study of metabolism in the individual case that the diet strictly necessary and sufficient for diminishing to the greatest possible degree or removing entirely the glycosuria can be established.

Among the carbohydrate foods it would seem that, in general, potatoes are well borne by diabetics, and may be taken as the chief article of diet; sometimes wheat flour is well supported; but the starch contained in bread is, on the other hand, very badly borne. Moderate amounts of glucose, given at intervals, are sometimes well borne and assimilated. Certain sugars, such as levulose, inosite and lactose, are often tolerated, and may be included in the diet in amounts proportionate to their utilization as energy-producers (fruit cures, Jerusalem artichokes, string beans, milk, etc.).

A fairly large amount of fats is to be included in the diet in the form of butter, cream, cheeses rich in fats, etc. Their excessive use must be avoided, however, in order to obviate digestive disorders and pancreatic disturbances interfering with food absorption, as well as to stave off acidosis.

Alcohol would appear to be useful as an easily and completely oxidizable food; but when used in excess it causes disturbances of nutrition and glandular func-

tions, and it has been shown, moreover, that, though not furnishing sugar directly, alcohol often increases glycosuria through a secondary effect on nutrition.

Proteid foods, which, the author believes, are commonly allowed in too large quantities to diabetics, are often just as prejudicial as the carbohydrates; on the one hand, they increase the glycosuria and nitrogenous elimination; on the other, they give rise to intermediate toxic products which exert a harmful effect on the already defective nutritive processes, accentuating the glycosuria and at the same time inducing phenomena of acidosis, sometimes followed by diabetic coma.

Thus the formerly accepted diet in diabetes has undergone transformations in the direction of greater precision, of more complete adaptation to the actual needs of the case. The ration of the diabetic must be strictly adapted, both as to carbohydrates and albuminous bodies, to the capacity of the organism for dealing with these two classes of foodstuffs. In short, it is necessary to measure individual standards of tolerance, to furnish the maximum amount of carbohydrates that can be borne in the form in which it is best borne, to provide the minimum amount of albumins required for preservation of the nitrogenous equilibrium, and, at the same time, to reduce the total amount of food taken to the minimum necessary for nutritive equilibrium without allowing unnecessary losses or being led astray by the patient's natural tendency toward bulimia. P. Carnot (*Journal médical français*, July 15, 1910).

FAVUS, X-RAY TREATMENT OF.

The author reports the results obtained in a series of 82 cases of favus treated with the X-rays. In one case only was the fungus found again present upon microscopical examination eighteen months

after the treatment. The method found to give the best results is as follows: On the day previous to the application of the rays the hair is cut quite short with clippers, and the child's head washed with soft soap. If many crusts or much suppuration is present the head may be further cleansed by the application of cyllin poultices. The X-rays are applied after the manner advocated by Kienböck. The hairy scalp is mapped out by taking five centers, each of which is not less than five inches from those adjacent. By this means the whole scalp is epilated by five exposures, each case taking on the average about one hour. Protection for operator and nurse is obtained by using some form of shield. Eighteen days after the irradiation the head is washed, by which time the hair has begun to fall out. A cyllin poultice is applied daily for the next three days, the head being washed daily after this for seven to ten days. By this time the scalp should present a billiard-ball appearance, and if there should be a few stumps remaining these are picked out with epilation forceps. Unless contraindicated, pure cyllin is painted on once weekly. If this proves too strong it may be diluted, or else dilute ammoniated mercury ointment rubbed in daily. New hair appears in about nine weeks, and in three months is often half an inch in length. J. F. H. Dally (Archives of the Roentgen Ray, October, 1910).

FIBROMYOMATA UTERI, GANGRENOUS.

Combining the statistics of seven observers in a total of 7366 cases of uterine fibromyoma, the author finds that 5.44 per cent. of these tumors undergo necrosis. He reports two cases of his own in which this accident occurred, one of which ended fatally notwithstanding operation, and emphasizes the fact that it

is a serious lesion which must be operated early. Though often a cause for the infection of the tumor can be traced, there may be a perfectly normal antecedent history. Menopause does not lessen; on the contrary, advancing years increase the likelihood of gangrene. In the presence of fibromyomata uteri, all intrauterine instrumentation should be done bearing in mind the possibility of this serious degeneration which may follow.

While opinions vary as to the advisability of removing all fibromyomata as soon as possible after the diagnosis is made, they should certainly be under careful observation, and in the presence of sudden transition from a quiet to a stormy course, with acute pain and tenderness in the lower abdomen, increase in size of the tumor, a foul vaginal discharge and an associated septic intoxication, the treatment must pass from the expectant to that appropriate for gangrenous degeneration. Pedunculated submucous tumors should be removed at once, as 43 per cent. necrose.

Necrotic intra-abdominal fibroids, with infection of the cellular planes, may give a picture similar to septic infection after pregnancy, if seen for the first time late in the disease; the symptoms of the complication may outshine those of the dying fibroid. Prognosis in such cases is bad.

The author counsels not to wait for too great a refinement in the diagnosis; operation is safer than waiting, and, after all, the fibroids are much better removed. One should not be deceived by the subsidence following the acute onset; it is only seeming and not real, as in gangrenous appendicitis. In the more extensive lesions, the pulse will remain high, even though the temperature may fall. In the more moderate cases, although the morning temperature may be normal or even below, the pulse rate will remain some-

what accelerated. E. A. Rundquist (The Post-graduate, October, 1910).

HÆMOPHILIA, INJECTIONS OF WITTE'S PEPTONE IN.

The authors relate the case of a boy, 9 years old, who presented all the clinical and hæmatologic signs of hereditary hæmophilia. Since the age of four months he had had subcutaneous hæmatomas, hæmaturia, hæmorrhages from the mucous membranes, and joint disturbances, besides showing a markedly lengthened coagulation time. Injections of fresh antidiphtheritic serum hastened coagulation, but had no influence either on the general condition or on the hæmorrhages. Subcutaneous injections of Witte's peptone were then given, thirty-eight cubic centimeters of a 5-per-cent. solution being given in seven injections in the space of two months and a half. The coagulation time was shortened, the hæmorrhages ceased, and the general health became excellent. While these injections are well supported in moderate doses, it should be noted that large amounts cause febrile movements and erythematous eruptions. Nobécourt and Tixier (Société médicale des Hôpitaux; Bulletin médical, October 26, 1910).

HÆMORRHAGES INTO THE VITREOUS BODY, FIBROLYSIN IN THE TREATMENT OF.

The writer records a case of this nature in which all measures, tried during two months, had failed. Two cubic centimeters of 10 per cent. fibrolysin were injected into the gluteal muscles, with the result that two days later vision was greatly improved. Repeated injections were given, with continued betterment. Later, a second hæmorrhage took place, but the visual acuity was again favorably influenced by fibrolysin. The age and general condition of the patient must be

taken in consideration in using this form of treatment. In young patients it is quite safe, but in the aged caution is necessary. The efficacy of the remedy appears to be proportionate to the promptness with which treatment is begun after the hæmorrhage. Thilliez (Journal des sciences médicales de Lille, September 3, 1910).

HYPOTHYROIDIA AND DYSTHYROIDIA IN CHILDHOOD.

Attention is called by the author to the fact that in the normal infant at birth the thyroid gland is functioning but little or not at all; hence the signs of thyroid insufficiency presented by the newborn child, which have already been referred to by Lévi and de Rothschild. Growth of the gland, together with the thyroid products obtained from the maternal milk, soon lead to disappearance of these signs; but if the mother or the wet-nurse has altered thyroid function they persist for a long time or even indefinitely. Such disturbances may vary from a confirmed goitrous condition with cretinism to the most insignificant manifestations; in the latter case it is sometimes difficult to recognize their true origin. Mothers or wet-nurses with hyperthyroidism are sometimes responsible for infants showing phenomena of the same nature—bulimia, exophthalmos, tremor. Slight hypothyroidism represents simply the "lymphatic diathesis" of the classic authors with its varied manifestations, and yields, according to the author, to a skillfully conducted thyroid treatment. The other organs supplying internal secretions also exert their influence in these processes; their disorders may either be merely added to those of the thyroid, may make up for the thyroid deficiencies, or may lead to the production of bodies antagonistic to the thyroid.

The thyroid and the ovary are physiologically related in many ways. That pregnancy or even merely loss of virginity caused the neck to swell was known by the ancients, and it has been recognized that hypothyroidism is a cause of dystocia through uterine inertia, as well as of abortion. Sometimes, moreover, the physiologic hyperthyroidism of early pregnancy is replaced later by thyroid insufficiency (Lévi and de Rothschild). Sometimes, too, various acute or chronic infectious states in the mother, or even emotions and physical and mental overexertions, may lead to manifestations of hypothyroidism in the infant. The author's views have been confirmed clinically and experimentally by his pupils Spolverini, Pellegrini, and Frenquelli.

In man the study of the phenomena referred to is complex, owing to the fact that the thyroid and parathyroid glands are so closely associated. It is difficult to separate the morbid manifestations attributable to the former from those related to the latter, though it is well recognized that myxœdema is dependent upon athyroidism, while tetany is due to parathyroid disturbances.

Among the conditions in which the author noted improvement under thyroid treatment were intellectual backwardness, asthma, headaches, eczema, muscular asthenia, and Oppenheim's disease. The thyroid gland, which excites cellular activities of every variety, increases the amount of complement in the blood, which plays so important a part in all processes of tropholysis, hæmolysis or bacteriolysis. Athyroidism is associated with a decreased amount of complement in the serum, hyperthyroidism, with an increased amount. The complement does not pass out as such in the milk, but only the substances which favor its formation.

The complement in the blood of the child bears a constant relationship to that in the blood of the mother. It is less in the bottle-fed than in the breast-fed infant, and in this fact we have a cause for disease or death in bottle-fed children. In fact, the author, by means of small doses of thyroidin given to foundlings fed by the bottle, was able to save a few of them, whereas those to whom it was not given all died. The estimations of the complement in all the researches were made by taking thyroid extract as antigen, the serum of immunized dogs as sensitizing body, the fresh serum as complement, and the sensitized erythrocytes as hæmolytic material. Concetti (*Revue d'hygiène et de médecine infantiles*, No. 3, 1910; *La médecine pratique*, July, 1910).

INFECTIONS, LOCALIZED, SOLUTION OF SODIUM CITRATE AND SODIUM CHLORIDE FOR DRAINAGE IN.

The author comments on the value of Wright's solution of sodium chloride, 4 per cent., and sodium citrate, 1 per cent., as an agent for promoting drainage of abscesses. The hypertonic solution of sodium chloride by osmosis brings about a flow of lymph through the abscess walls, while the sodium citrate, by precipitating the calcium salts in the lymph, prevents the latter from clotting, and thus perpetuates the discharge. The lymph and 4 per cent. salt solution both antagonize the bacteria.

The technic of treating an abscess by this plan is described as follows: The abscess is opened by a wound as small as will allow the cavity to be wiped out, or thoroughly emptied by expression. The surrounding skin is well cleaned with 70 per cent. alcohol and smeared up to the very mouth of the wound with boric acid or eucalyptus vaseline, in order to avoid skin irritation from the salt solution. If

the skin tension closes the opening a bit of rubber dam may be put in. The wound is covered with a voluminous pad of gauze or of absorbent cotton covered with gauze, dripping wet with hot salt and citrate solution. A many-tailed bandage or some other application holds the poultice in position, and the part is put at rest. Outside the dressing may be applied a hot flaxseed poultice or a hot-water bottle. In any case, as often as the dressing gets cold, more of the hot solution is poured over the whole dressing to wet and warm it again, or the dressing is removed and the whole part soaked, if possible, or bathed with the same solution.

The solution is contraindicated if there is a tendency to persistent oozing of blood from the wound, and where the formation of protective adhesions is desirable.

Inguinal and axillary bubo, abscess of neck, septic fingers, mastoid wounds, otitis media after paracentesis, all drain well under this method. The solution should be used only for the first thirty-six to seventy-two after operation, during the acute stage of inflammation. The wound is then filled with glycerine or balsam of Peru. L. R. G. Crandon (*Annals of Surgery*, October, 1910).

INTESTINAL AMOEBIASIS, IPECAC IN THE TREATMENT OF.

After four years of experience, with but little success, in attempting to eradicate intestinal amœbiasis by means of rest, dieting, and lavage of the colon, using copious enemas of salt solution, quinine, thymol, and quinine and thymol combined, the authors obtained encouraging results with ipecac given in salol-coated pills. Eight cases of amœbiasis with dysentery, followed for six weeks to five and one-half months, with repeated

examinations of the stools for amœbæ, were apparently cured; also 3 cases with dysentery, followed less than six weeks, and 3 cases without dysentery, followed from two to five months. There was failure to eradicate the infection in four other cases, but these were not thoroughly treated.

Probably the best dosage and method of administration, the authors believe, is to begin with 60 or 80 grains at bedtime, and decrease the dose 5 grains daily until a dose of 10 grains is reached. As a rule, it is unnecessary to continue the treatment longer, and usually advisable not to do so, for the small doses may serve only to keep up a catarrhal condition of the bowel, already excited by the large doses. Rapid cures may sometimes be effected by giving forty grains of ipecac three times during twenty-four hours, but this method is not a sure one. The thickness of the salol coat of the ipecac pills must be carefully regulated so as to prevent vomiting on the one hand, and, on the other, the passage of intact pills through the intestinal canal. A coating one-sixteenth inch thick gave the best results; if anything, it was slightly too thick. The patient should be at rest in bed and on liquid diet; no solid food or milk should be given for at least six hours previous to the ipecac, and no liquids for three hours previous. No opiate is necessary.

The experience of the authors leads them to state that a large proportion of amœbic infections can be eradicated by ipecac treatment. It was far superior to any treatment previously tested, and should always be given a thorough trial before surgical treatment is attempted. W. V. Brem and A. H. Zeiler (*American Journal of the Medical Sciences*, November, 1910).

INTESTINAL DISORDERS, HORDENINE SULPHATE IN THE TREATMENT OF.

This alkaloid acts in therapeutic doses as a cardiac and vascular tonic, causing a rise in the blood-pressure. It also inhibits intestinal peristalsis. The sulphate is freely soluble in water, and is suitable for either oral or hypodermic administration. The alkaloid is of low toxicity. In man, daily hypodermic doses of 0.25 to 0.75 Gm. (4 to 12 grains), or doses of 2 to 3 Gm. (30 to 45 grains), taken by the mouth, produced no noteworthy untoward symptoms. Clinically, the best results obtained with this drug were in cases of mucomembranous enteritis; in most instances, the pain was progressively relieved, the bowel movements were regularized, the glairy, mucous secretions were diminished, and the patient's general condition was distinctly improved. Caution is to be enjoined, however, in using the drug in cases of acute enteritis with hæmorrhage, in view of its blood-pressure-raising effect. Cases of tropical dysentery appeared to derive particular benefit from the drug. In a number of cases of typhoid fever accompanied by profuse diarrhœa and circulatory weakness, its useful effects were also witnessed. In diarrhœa due to errors of diet, hordenine was found beneficial, though the results noted could have been obtained equally well by strict dieting. In infantile diarrhœa, the remedy may be used in conjunction with the methods of treatment ordinarily employed. Martinet (*Presse médicale*, September 10, 1910).

LEG ULCERS, TREATMENT OF.

Attention is directed by the author to the value of gelatine-glycerine-zinc oxide paste in the palliative treatment of leg ulcers dependent upon defective circulation and varicose veins. From an experi-

ence of several years with it, he believes it to be greatly superior to other forms of treatment. The paste is prepared by dissolving two parts of the purest gelatine in five parts of water on the water bath, and, while the mixture is still hot, adding five parts of glycerine and two parts of powdered white oxide of zinc. These are then energetically stirred in until the whole is cool. When xeroderma or hyperplasia, pruritus, and malodorous lesions are the indications, salicylic acid, carbolic acid or resorcin, respectively, may be added to the formula. At room temperature the paste assumes the consistency of ordinary table gelatine or soft rubber.

Prior to application the paste is liquefied in a hot-water bath, then cooled sufficiently to avoid injuring the skin. The leg and foot are cleansed with water and soap (preferably tincture of green soap), alcohol, bichloride of mercury, 1 to 2000 or 1 to 4000, or carbolic acid, 1 to 100. The ulcer is also disinfected with hydrogen peroxide and bichloride solution or carbolic acid. The surface is thoroughly dried, and the paste then made to cover the entire surface from the metatarsophalangeal joints to the tubercle of the tibia. A layer of gauze is then applied, most satisfactorily from a three-inch roller cut at intervals to avoid excessive overlapping and wrinkles. Paste and gauze are then alternated until three or four layers of the bandage have been applied, finishing with the paste. A coating of shellac may be applied over this as soon as the dressing has become solid. A very thin layer of non-absorbent cotton, talcum powder or bandage, temporarily, will answer the same purpose.

The dressing may sometimes be allowed to remain from two to eight weeks, and when removed the ulcer will be found healed. The safer procedure to

adopt, however, is to have the patient return in two days. If, as often occurs, suppuration or discharge is then found, the dressing must be fenestrated, the ulcer cleaned, and a dry dusting powder, such as salicylic and boric acid talcum, bismuth oxyiodide, methylene digallate or thymolis iodidum, supplemented by a simple gauze dressing, applied. In such a case it is essential that the patient return two or three times weekly for renewals of the gauze dressing. Should the paste dressing become loose owing to subsidence of swelling, it must be removed and a fresh one applied. It was never found necessary to scarify, curette or excise the bed or edges of a so-called indolent ulcer, nor to apply any stimulant or cauterant in order to effect healing. The dressing restores support to the congested venous circulation, is freely pliable, indeed, slightly elastic, contracting somewhat after application, and by virtue of its tenacious character will not slip.

Brief histories are given of 44 cases treated by this plan. Varicose veins were the primary cause of ulceration in 36. One case seeking relief from extensive venous varicosities due to pregnancy was greatly benefited. Three cases presented a syphilitic infection as a contributing cause, and in these the results were less brilliant. The paste dressing was also used in four cases of eczema of the leg, with improvement or cure in every instance. B. A. Thomas (University of Pennsylvania Medical Bulletin, October, 1910).

PERIRECTAL INFECTION, TUBERCULIN REACTION IN CASES OF.

In view of the frequent coincidence of pulmonary tuberculosis with perirectal infections, the author undertook a series of tests and examinations in order to de-

termine their relation. The Moro reaction was used, combined with physical and bacteriologic examination. The results were as follows: In 21 cases of rectal pyogenic infections, including fistulæ, abscesses and deep rectal ulcerations, there were twenty positive reactions. The negative case was one profoundly tuberculous. In eleven non-pyogenic rectal cases, including hæmorrhoids, fissure and catarrhal proctitis, there were three positive reactions. This, the author holds, is probably the ratio of tuberculosis in this class of cases. Four cases giving negative reactions, yet shown to be tuberculous by sputum examination, proved to be of very low resistance, two dying in a few months, and two being in a precarious condition at the date of writing.

The author mentions "continued history taking" as being extremely valuable in the proper appreciation of the case. He lays particular stress on the prognostic value of the tuberculin test. Accepting the positive reaction to tuberculin as indicative of a tuberculous lesion somewhere in the body, he concludes that: 1. Two consecutive negative reactions, with no physical signs in evidence, is conclusive proof of the absence of such lesions. 2. Two consecutive negative or feeble reactions, with physical signs somewhere, are indicative of a very grave prognosis. 3. The degree of reaction is directly proportionate to the degree of resistance of the individual. 4. The tubercle bacillus, like no other, reduces the bodily defences to pyogenic invasion. 5. In practically all rectal pyogenic infections, there is a tuberculous lesion somewhere in the body. 6. The classification of perirectal infections into tuberculous and non-tuberculous is untenable. C. F. Martin (Transactions of the American Proctologic Society, June 6 and 7, 1910).

PNEUMONIA, POSTOPERATIVE.

The author presents an analysis of the postoperative pulmonary complications in a series of 2000 consecutive cases operated in a Boston hospital. Of 1089 laparotomy cases, 8 developed pneumonia, 9 bronchitis and 3 pleurisy, while of the remaining 911 cases, most of them plastic and breast operations, 1 developed bronchitis and 1 pleurisy. The process seemed similar in all the cases, the more severe ones going on to a bronchopneumonia, the less severe stopping with a bronchitis or pleurisy. The average time of onset was three days, whether all the cases be taken collectively or each of the three types individually. There was no mortality. The methods of anæsthesia included ether, with the open cone, 1591; gas and ether with the Bennett inhaler, 259 times, and ether by the drop method, 124 times.

Postoperative lung complications, the author concludes, occur somewhat more frequently and are more fatal in cases previously septic or desperately sick or in the aged and feeble. Operative shock, method of administration, length of time of the anæsthesia, age of the patient unless extreme, physical type of the patient, bad behavior under ether, wound sepsis and pulmonary embolism, do not seem to bear any constant relationship to the causation of postoperative pneumonia. Lung complications occur with great constancy during the cold weather months, and are rare during the summer months. Pre-existing foci of infection in the lungs are almost invariably lighted up or aggravated by operations under ether anæsthesia. In fact, most of the cases of postoperative lung complications are caused, in the writer's opinion, by the lighting up or the aggravation of pre-existing focal infection. Many postoperative pneumonias might be avoided by a more

careful and more expert pre-operative examination of the respiratory tract. W. P. Graves (Boston Medical and Surgical Journal, September 29, 1910).

PROSTATE, THE SMALL FIBROUS.

The author calls attention to the fact that there is a class of obstructive prostates in which the rectal examination shows little, if any, increase in size of the gland. These prostates are dense and fibrous, showing little similarity to the large hypertrophic prostates. They do not show the least tendency to form enucleable tumors such as are seen in the hypertrophic cases. They are the result of an inflammatory process. Three of the 6 cases reported by the author gave a history of gonorrhœa; in the others no etiological factor could be found, the histological appearance making it seem probable that the process depended upon some very mild infection without a doubt not of venereal origin.

In the first stage, while the bladder can still completely empty itself, the diagnosis is difficult. Occasionally one may feel by rectum practically no prostate at all. More often a small, but clearly defined fibrous-feeling gland, with a well-marked sulcus, is felt. If, in addition to symptoms of bladder irritation, there is marked resistance to a soft catheter just at the bladder outlet, the condition is suggestive. In doubtful cases a cystoscopic examination will often be useful. The prostate may be seen to bulge back into the bladder a little on the sides, or the anterior commissure may be very marked. Some of these patients get temporary relief from the use of sounds, for the obstruction to urination is not from a raising or deformity of the bladder outlet, but from a lack of distensibility of the outlet, owing to the ring of fibrous prostatic tissue.

Where there is residual urine, the diagnosis is much easier. Broadly speaking, if one can rule out stricture, a lesion of the spinal cord or a bladder diverticulum, the cause of any residual urine may be assumed to lie in some prostatic abnormality. Under this term the author includes not only the hypertrophic and fibrous prostate, but also bars at the bladder outlet and contraction of the bladder neck, believing them almost always dependent upon fibrous changes in the prostate. Tuberculosis of the prostate may be confused with the fibrous organ, but it rarely has the clear-cut, hard outline, is usually more tender, and is often associated with a mass in the epididymis or a vesicle, and with tubercle bacilli in the urine. Carcinoma of the prostate in the early stage sometimes cannot be distinguished from the small fibrous obstructive prostate. Later, the stony hardness, and especially the fixity of the carcinomatous gland, make differentiation easy.

As to the operative treatment of small, fibrous prostates, the transverse perineal operation is the best. In these cases one must do more than is necessary with the hypertrophic cases. After removal of all the prostatic tissue one can get, there often remains a small, tight fibrous bladder outlet, wholly different from the gaping, open outlet seen after removal of the usual hypertrophic gland. The author modifies the ordinary transverse perineal prostatectomy as follows: After laying bare the prostate, the prostatic urethra is opened through the gland itself, at a point just back of its tip, instead of in front of the gland. This is done to avoid injuring the compressor urethræ. A transverse incision is then made through the capsule, or else an incision into the substance of the gland, and all the prostatic tissue that can be gotten, below and at the sides of the urethra, removed with

biting forceps. If, after this, the bladder outlet still presents a sharp, tight ring, this must be cut. A single cut on the floor will generally be sufficient; if required a lateral cut may be added, or two lateral cuts alone may be made. The author does not believe that incontinence follows this cutting of the outlet, if one leaves the compressor urethræ intact. There is usually not much hæmorrhage. Double tubes are then placed in the bladder and brought out through the perineal wound; they are to be left in place three or four days. A small rubber catheter is also passed into the bladder through the urethra, and fixed by a stitch at the meatus. Rubber-covered wicks are led down into the cavity left by the prostate, and the wound closed around the tubes and wicks. The bladder is irrigated while the urine remains bloody. The wicks are removed in twenty-four hours. This procedure gave good results in the cases in which it was used. A. L. Chute (Boston Medical and Surgical Journal, October 20, 1910).

RHEUMATOID ARTHRITIS, DIAGNOSIS AND TREATMENT OF.

Diagnosis.—Arthritis deformans should be strongly suspected when the following conditions obtain: 1. When a case of joint inflammation presents simultaneous involvement of corresponding joints on both sides of the body. 2. When the maxillary articulation is involved. 3. When the joints of the fingers or toes are involved. 4. When muscular atrophy accompanies or precedes the outbreak. Rheumatism sometimes produces atrophy by compelling disuse of joints, but this takes place in the later stages of the attack. 5. When a case is accompanied or has been preceded by local sweats, local syncope, or local asphyxia of the parts affected, or of the corresponding parts on

the other side of the body when but one side is frankly diseased. 6. When trophic or pigmentary changes are apparent in the skin over or near the affected joints in the clavicular regions, or on the outer aspects of the forearm or lower legs. 7. When a patient gives a history of having had, for some time preceding the outbreak, stiffness or soreness of joints immediately after wakening in the morning, which disappeared after using the joints a little. 8. When a case of "stiff neck" proves resistant to ordinary methods of treatment. 9. When a case of apparently rheumatic joint inflammation resists thorough salicylic medication vigorously for more than a week.

Treatment.—As a routine standard of treatment, to be modified according to the individual peculiarities of the various types of the disease, and the variations in the patient's condition from week to week, the author recommends the following general plan: 1. Rest in bed for at least ten hours out of the twenty-four. 2. A diet as generous as can be digested and assimilated by the individual patient without producing putrefaction or fermentation. 3. From $\frac{1}{30}$ to $\frac{1}{40}$ grain of strychnine sulphate, and two or three grains of ferrous iodide three times daily, half-hour before meals; and in emaciated cases one to four drams of codliver-oil, after meals. 4. A dose of some one of the various mineral waters, before breakfast, every two or three days, if constipation is present. 5. A body dry hot air treatment two or three times weekly. 6. Central galvanization once or twice weekly. 7. A general application of mechanical vibratory stimulation two or three times weekly. 8. A static electric application at least once every day, consisting, in acute cases, of the Morton wave current over the affected joints or spine, and in the chronic cases of long,

thick sparks to the affected joints one day, and the Morton wave current localized over these joints the next. In some cases one of the high frequency currents, applied either locally or generally, may advantageously replace some of these static applications or be added to them. 9. A hot and cold douche to the spine two or three times weekly.

The hot air application referred to is to be neither a cabinet bath nor a Turkish bath, which are almost always debilitating in this disease, but is given by means of a metallic asbestos-lined cylinder, long enough to include the body up to the armpits, and heated by gas, gasoline or electricity. The treatment intensity should be from 350° to 400° F., the heat being run up rapidly to this temperature. The patient should be in the recumbent position during the application and for some time afterward. As a rule, an increase in the pulse rate to 120, or an increase in the mouth temperature of 2° F. over what it was before the treatment, indicates that a proper degree of influence has been secured, and from twenty to thirty minutes' exposure will ordinarily suffice. By this method a profound stimulation of physiological function is secured, whereas, if the patient is treated for long periods with the lower degrees of heat, the ultimate result is depressing and pernicious. C. E. Skinner (*American Journal of the Medical Sciences*, November, 1910).

SYPHILIS, "606" IN.

Certain of the arsenical compounds, including "606," by killing some of the spirochetæ present in the organism, cause the production of antibodies which destroy the remainder. The best curative results are, naturally, obtained when the disease is at its height, when the body is saturated, so to speak, with the specific

organisms, since the formation of antibodies may play even a greater part in causing their complete dissolution than the direct destruction of a few. In his experiences with the new remedy in 80 cases, the author found that a much larger dose was required to heal an early chancre than to cure completely a case of extensive gummatous ulceration, for instance, in a congenital syphilitic; therefore, he feels justified in assuming that the cure is largely due to the amount of antitoxin formed. If a mother, after giving birth to a syphilitic infant, be injected with "606," all the syphilitic manifestations disappear within a week after it is put to the mother's breast. The improvement is not due to the amount of arsenic the child receives, since none is found in the milk; it must, therefore, be due to the antitoxin produced in the mother by the death of her spirochetæ, and which is conveyed to the child by the milk. This is of much importance, since the risk of death in an infant injected with the smallest possible dose of "606" is enormous, owing to the amount of endotoxin formed. We do not yet know whether the cure obtained in a child in this way is permanent, and Ehrlich's advice at present is to give the child an injection later, when it is in a healthier condition.

The remedy should be injected preferably under the trapezius muscle, on a line with the spine of the scapula and midway between the scapula and the vertebral column. Injections into the glutei necessitate recumbency, and, since the pain is often worse in this position than when standing up, patients begin to walk about the room on the second and third day, when suddenly they are seized with severe sciatica which may keep them bedridden for as long as three weeks, probably due to gravitation of the injection

mass downward on to the sciatic nerve. Injecting into the shoulder one is below the brachial plexus, so there is no radiating pain down the arm, and only a very occasional shooting pain down the back and up to the head. Emphysematous patients, however, should always be injected in the glutei, as otherwise difficulty in breathing may arise, owing to spasm of the intercostal muscles on the side injected. The emulsion employed by the author is not more than six cubic centimeters in bulk.

As a prophylactic the drug is powerless, since its constituents are not broken up unless acted upon by the protozoa. In early cases of syphilis where a chancre alone was present, no secondary symptoms ever developed. In the secondary stage it is the rule for all symptoms to disappear after a single injection of from 0.5 to 0.6 Gm. Very rarely the rash is temporarily increased in severity. The interpretation of this is, that the dose given was too small, and the cases reported did not receive more than 0.3 Gm. In a case of malignant syphilis with added pulmonary tuberculosis, the cough subsided, night sweats ceased, and physical signs diminished after an injection of "606." In another case the small recurrent papular syphilide (lichen syphiliticus), perhaps the most resistant syphilide to mercurial treatment, disappeared in a short time.

The writer lays stress on a group of subjective phenomena which the patient usually does not complain of, but the disappearance of which he calls one's first attention to after the injection, viz.: precordial pain and heaviness, palpitations, cardiac irregularity—in short, a pseudoangina, probably dependent upon an endarteritis of the small vessels. So constant are these symptoms that they should prove of diagnostic value.

The risk of optic atrophy from "606" need scarcely be seriously considered, since no case of amaurosis is on record, and the writer injected one case of bilateral optic neuritis without atrophy ensuing, one case of unilateral optic neuritis, caused by soamin injections, two cases of syphilitic choroiditis, and two cases of syphilitic iritis, which healed after a single injection. In parasyphilitic affections the drug will not often be indicated, since both tabes and general paresis are usually too far advanced before treatment is started. If a case is obtained early the result of treatment is really marvellous, as shown in one of the author's cases, in which such symptoms as diminished knee-jerks, sluggish pupils and slight ataxia were caused to disappear. Three cases of tabes with marked ataxia did not improve under the injection, but foreign reports state that lightning pains disappear under the drug's influence.

Where syphilis is complicated with tubercle, as is almost invariably the case in the malignant form, the injection acts beneficially upon the tuberculous lesions. Secondary infection with streptococci and staphylococci is often cured, along with the syphilitic processes it complicates. On the other hand, the injection does not confer immunity to either variety of coccal infection, since one case developed erysipelas a fortnight after injection, and two or three were subsequently troubled with furunculosis. On gonorrhoea concurrent with syphilis, the injections had no effect either for better or worse.

In a case of leprosy no good result was produced by an injection of "606." One man's death was hastened by the injection, a supposed case of cerebrospinal syphilis, which turned out post mortem to be one of disseminated sarcoma.

Wassermann's reaction, which the writer advises as a precautionary step before injecting any patient, had not been carried out in this case until after the injection, proving negative. In one case, an alcoholic, delirium tremens commenced on the third day after the injection, though it is impossible to say to what extent the condition was due to the injection or stopping of the alcohol. An emphysematous, plethoric man of 50 developed pleurisy on the side of the injection on the second day. In two cases only did the injection cause a rash. Two cases have recurred; it is probable that in both the initial dose, 0.4 Gm., was too small. J. E. R. McDonagh (*Lancet*, October 22, 1910).

TUBERCULOSIS, THE INJECTION OF MERCURY AFTER TUBERCULIN INJECTIONS IN.

Mercurial treatment in tuberculosis has seemed, in the author's experience, to be of most use in incipient cases and in the more severe acute forms. Mercurial salts, acting as powerful antiseptics, are better able to inhibit the tubercle bacilli in a more or less free state than when walled off by new tissue growth and scar formation. The author has employed a combined treatment of tuberculin and mercury, so far only in a small number of cases, working upon the theory that tuberculin, through its effect of causing hyperæmia and softening of the tuberculous areas, would serve to increase the antiseptic effect of the mercury, while, on the other hand, in the presence of this antiseptic agent, larger doses of tuberculin might be used without risk, with a corresponding increase in therapeutic effect.

Each patient was given a hypodermic injection of from $\frac{1}{6}$ to $\frac{1}{2}$ of a grain of succinimide of mercury every other day,

until thirty injections had been taken, then started with injections of old tuberculin, usually given every other day, alternating with the mercury injections. After fifteen days of the combined treatment a period of rest from treatment, varying from fifteen to thirty days, was given, then another course of mercury alone started, etc. It is best to ascertain beforehand the tolerance to tuberculin in the untreated case, the dose to be adopted being one-fiftieth of the amount of old tuberculin which, in $\frac{1}{10}$ c.cm. dilution, will first give a von Pirquet skin reaction (White and Graham). The dose of tuberculin employed after the administration of mercury was usually three to four times as large as that used before. In one case such a dose every other day gave rise to no general reaction, though one-fourth of this amount, given every four or five days before the mercurial treatment, shot the temperature persistently up to 102° F.

The improvement noted in the limited number of cases thus treated was very marked. C. A. Penrose (New York Medical Journal, June 11, 1910).

TUBERCULOSIS OF THE BLADDER, A CONTRIBUTION TO THE TREATMENT OF SEVERE FORMS OF.

In a case of advanced vesical tuberculosis, in which the most powerful local measures had failed to relieve the constant pain and tenesmus, and the patient was rapidly falling into a state of cachexia, the author succeeded in procuring relief without performing a radical excision of the organ. The bladder had already been entered twice by suprapubic incisions, and on several occasions from the perineum, without improvement. Extensive tuberculous lesions, together with calculi, had been found. A sound was introduced through a perineal in-

cision, and the bladder opened widely from above and packed. No effect was produced on the symptoms. The packing was not well borne, and was replaced by a tube; but this also had to be removed at the end of three weeks. A bilateral lumbar nephrostomy was then contemplated, with total excision of the bladder as a secondary procedure. At operation the right kidney was found extensively diseased and was removed. The left kidney appeared normal. A sound was then introduced through the incised ureter, pushed in toward the inferior calyx, and its external end immersed in a receptacle containing an antiseptic fluid. The operation was not followed by a rise of temperature. The pain disappeared completely and the tenesmus was relieved, owing to the fact that the urinary flow had been diverted from the diseased area. Two weeks later the sound was removed, a satisfactory lumbar fistula remaining. The general condition rapidly improved, the patient gaining 20 kilos (44 pounds) in weight in five months. Excision of the bladder was no longer necessary, and cure of the tuberculous process in this organ appeared probable. The author recommends that in similar cases nephrostomy be performed. C. Willems (La Clinique, Brussels, August 6, 1910).

TUBERCULOUS ABSCESS, TRYPSIN TREATMENT OF.

One hundred cases of tuberculous abscess, including tuberculosis of bony structures, joints, lymph glands, tendons, etc., were treated with trypsin by the author. The procedure is described as follows: 0.1 Gm. of trypsin is introduced in sterile flasks of 10 cubic centimeter size, and the mouths of the flasks plugged with cotton. Before using each flask is filled with normal saline, giving a 1-per-

cent. solution of trypsin. The mixture should be freshly prepared each day, as it is unstable. The abscesses are entered with a large trocar and emptied as much as possible by pressure. One to two centimeters of the trypsin solution is then injected and the opening covered with adhesive plaster. Injections are given every five to seven days. Joint cases are always immobilized in plaster dressings.

After a few injections the pus, originally yellowish, assumes a brownish-red color owing to admixture of blood, and resembles an emulsion. This method gives good results in "ganglion" and cold abscesses of small size. Small, bony foci may also be cured. In burrowing abscess formations, trypsin has no particular advantage over iodoform and glycerine. It should not be used at all in cases of joint tuberculosis with extensive bony foci, or in lymphatic foci which have not yet become softened or are in the stage of caseation. No untoward results followed the injections except slight pain, lasting a half to one hour, and in some instances a painful cedema surrounding the focus, generally only temporary, but sometimes persistent. A. Brüning (*Deutsche medizinische Wochenschrift*, September 1, 1910).

WHOOPIING-COUGH, COMBINED QUININE AND HYDROPATHIC TREATMENT OF.

The author describes a method of treatment which has given satisfactory results in "several hundred" cases. It is based on what he considers to be the pathology of whooping-cough: "an infectious disease with a neurotic factor." To combat the infection he administers quinine in the form of a 1- to 2-per-cent. solution of quinine hydrochloride in doses of $2\frac{1}{2}$ fluidrams (10 c.c.), given at 8 A.M., 2 P.M. and 6 P.M., in severe cases also at 11 A.M. The 1-per-cent. solution is easily administered, diluted

with milk or water, to children under 1 year of age. For older children who object to the bitter taste he uses, instead, euquinine, administered in powders of 2 to 4 grains, three or four times daily. In treating the neurotic element he uses simple hydropathic "packs," which have a sedative influence on the nervous system. They are applied as follows: Spread a child's blanket crossways over the bed, lay on it a sheet, once doubled, soaked in tepid water of 54° (or even 52°) to 60° F., and well wrung out. Lay the patient on the sheet and wrap him in it; the wet pack must reach from the armpits to the knees, and be well covered by the blanket. The latter is fastened with safety pins, loosely enough so that the patient can sit up when a paroxysm comes on. The pack is applied at 6 or 7 P.M., renewed about 11 P.M., and left till morning. In cases where the cough is especially distressing later on in the night, it is applied at 9 or 10 P.M., and removed two to three hours later when the first convulsive whoops again supervene.

The results claimed with this form of treatment are as follows: Convulsive stage of whooping-cough shortened to from ten to twenty days in medium and severe cases. The number of attacks in twenty-four hours rarely exceeds 20, and is rapidly reduced to 16, 12, 10, 8, etc. The intensity of the attacks diminishes, also the disposition to vomit. The only complication observed in the author's cases was bronchitis. Half a dozen cases which came under treatment with bronchopneumonia as a complication rapidly recovered. The mortality was *nil*.

The quinine treatment was continued in half doses for several weeks after the convulsive stage in order to avoid relapses, and also as a general tonic. T. Zangger (*British Medical Journal*, October 15, 1910).

Clinical Summary

Of all practical articles and abstracts that have appeared in the Monthly Cyclopædia and Medical Bulletin during the current year.

Actinomycosis. **DIAGNOSIS.** Presence of corpora flava not essential to diagnosis of this condition. Repeated examinations of suspicious material often required. Only injection of actinomycotic pus or ingestion of material upon which actinomyces is grown will reproduce actinomycosis in animals; inoculation with pure cultures unsuccessful.

TREATMENT for actinomycosis of uterine appendages: 1. Extirpation and drainage. 2. For fistula, application of tribromphenol bismuth or irrigation with copper sulphate. 3. Potassium iodide internally, up to 75 grains daily. *Wagner.* Page 290

Addison's Disease. **TREATMENT.** Begin with 3 grains of desiccated adrenal gland three times daily after meals, and gradually increase the dose till temperature and pulse become normal; then maintain last dose. *Sajous.* 75

Excess of carbohydrates in diet found to diminish markedly the adynamia and fatigue in several cases. General condition bettered. *Pitres and Gautrelet.* 668

Adrenals, Diseases of. **DIAGNOSIS.** Adrenal insufficiency is suggested by: 1. Circulatory disturbances (small pulse, low tension, tachycardia, chilliness, white line). 2. Digestive disturbances (anorexia, vomiting, diarrhea or constipation). 3. Nervous disturbances due to toxic irritation of plexuses around adrenals. 4. General disturbances (anæmia, emaciation, progressive amyotrophy). Diagnosis confirmed by benefit from organotherapy. *Boinet.* 27

Anæmia. **TREATMENT.** Seven cases of severe anæmia greatly benefited by transfusion of only 5 cubic centimeters (75 minims) of human blood. No benefit in cases of leukæmia. Transfusion of this amount generally harmless, though blood from certain persons showed some toxicity. *Weber.* 63

Four cases of severe anæmia (1 pernicious, 3 chlorotic) greatly benefited by intramuscular injections of defibrinated blood. Draw off venous blood from healthy subject into small flask, stir for ten or fifteen minutes, filter through wool, and incubate for one-half to one hour. Inject 10 to 30 cubic centimeters in gluteal muscles; almost painless. Give also arsenic in increasing doses. *Huber.* 669

In anæmia due to auto-intoxication from gastro-intestinal tract, as often occurs in chlorosis: 1. Favor gastric functions by proper diet. 2. Secure regular bowel movements by laxatives. 3. Begin use of iron, giving following pill: Subcarbonate of iron,

0.10 gram (1½ grains); powdered aloes 0.02 gram (⅓ grain); extract of rhubarb, 0.05 gram (¾ grain); two pills before meals. *Huchard and Fiessinger.* 298

Gastric hyperæsthesia in anæmia and chlorosis favorably influenced in several instances by aluminium silicate, given in the form of neutralon in doses of ½ to 1 dram in 3 ounces of water, ½ to 1 hour before meals. *Rosenheim and Ehrmann.* 352

Aneurism, Aortic. **DIAGNOSIS.** Early positive diagnosis only by the X-ray. Expansile pulsation not constant. Abnormal dullness a valuable sign when present. Most constant sign is systolic bruit; present in 11 of 19 cases. Tracheal tugging in but 2 cases. Earliest and most constant symptoms were dyspnoea and cough. Interference with passage of bismuth capsule the size of a quarter through œsophagus found present in every case tested (by X-rays); especially valuable in small aneurisms growing back from transverse part of arch and shows œsophageal obstruction before dysphagia appears. *Lange.* 349

Angina Pectoris. **DIAGNOSIS.** Presence or absence of signs of organic disease at root of aorta should be ascertained. Signs of general arterial or aortic disease coexisting with history of precordial pain warrant diagnosis. A slight harsh clicking sound accompanying or following the sound of aortic closure, suggesting to the ear a roughening of the aortic cusps, is of value in the diagnosis. *Butler.* 22

TREATMENT. Erythrol tetranitrate has a less marked but more lasting effect than nitroglycerin. Especially indicated in those patients who are awakened at night by the pains. *Huchard and Fiessinger.* 172

Ankylosis. **TREATMENT.** Fibrolysin used with benefit in joints ankylosed as result of rheumatic affections. Single dose used was 2.3 cubic centimeters (37 minims) subcutaneously, sometimes more; largest total amount given was 117.3 cubic centimeters (4 ounces). Untoward effects: sometimes sensation of fatigue on day of injection, and occasionally slight local inflammatory reaction, which disappeared with moist dressings. Best results where ankylosis due to extra-articular connective tissue; less improvement in presence of pus and in gonorrhœal cases. Used in conjunction with hygienic and dietetic measures, warm sulphur baths, and later active and passive movements. *Knotz.* 124

Appendicitis. **DIAGNOSIS.** Following sign often useful in diagnosis between appendiceal

and pelvic inflammation: Stretching skin of abdomen slightly to increase its translucency, veins internal to anterior superior spine, and running upward and slightly inward, will be found darker than elsewhere when appendix involved. *Skinner*. Page 350

Appendicitis, Acute. TREATMENT. Where patient carried through an attack without operation, give only liquid diet till appendix removed. In perforative or gangrenous cases suffering from beginning diffuse peritonitis, gastric lavage, slow instillation of normal saline by rectum and abstention from cathartics or food by mouth are indicated; 97 per cent. can later be safely operated. *A. J. Ochsner*. 360

Appendicitis in Pregnancy. TREATMENT. In severe cases operate without delay. Mild cases do not demand operation unless there are frequent attacks. When near the end of gestation or in labor, terminate pregnancy and remove appendix immediately after. *Findley*. 160

Arteriosclerosis. DIAGNOSIS. Careful ophthalmoscopic examination frequently reveals the earliest signs of arteriosclerosis. *Bruner*. 23

TREATMENT. In 2 cases of arteriosclerosis in diabetes, blood-pressure was lowered and arteries rendered softer by treatment with dried thymus, 30 to 120 grains three or four times daily. Author uses fresh thymus of calves, dried by himself. *Gwyer*. 424

Following method recommended: Give patient light bath for a few minutes, bringing blood to surface and causing sedation. Follow this with static breeze for five to ten minutes—helpful in asthenia. Then apply high frequency current for ten to fifteen minutes. Diminution in arterial pressure follows. Séance should always cease when pressure falls to normal, otherwise harm may result. In intestinal atony complicating arteriosclerosis, faradic current, applied over abdomen, may be helpful. Mercury, iodine, iron and arsenic also to be administered, according to indications. *Satterthwaite*. 407

Arthritis Deformans. TREATMENT. Progress of disease often stopped by removal of causes of irritation, such as inflamed appendix, hæmorrhoids, etc. Where primary lesion obscure or no longer operative, best results obtained indirectly by relieving pain in affected joints. This is done by applying an absolutely rigid retention dressing, with the limb in such a position that the antagonistic muscles are in absolute equilibrium. If limbs cannot be brought into desired position without extreme pain, contractures are broken up under anaesthesia, and tendons lengthened, if necessary, by tendoplasty. Plaster-of-Paris dressing is applied, and allowed to remain until pain and irritation have subsided. A new plaster mold reinforced with basket splints and wheat gluten bandages is then substituted. *E. H. Ochsner*. 221

Ascites. TREATMENT. Autoserotherapy retards transudation into peritoneum and produces lasting polyuria. Under local anaesthesia withdraw a little fluid from peritoneal cavity with sterile hypodermic syringe, and at once reinject in subcutaneous cellular tissues. Repeat at six-day intervals, injecting progressively larger doses of ascitic fluid (3, 5, 8, and 10 cubic centimeters). Continue treatment for two months. *Audibert and Monges*. 160

Asphyxia. TREATMENT. Adrenalin, slowly administered intravenously; 10 drops of 1:1000 solution in 1 dram of saline solution. Artificial respiration. *Sajous*. 75

Asthma. TREATMENT. To arrest paroxysms, adrenalin (5 to 10 minims of 1:1000 solution in 1 dram of normal saline) may be slowly injected into a superficial vein or hypodermically. *Sajous*. 75

Thyroid and corpus luteum preparations found valuable in 7 out of 14 cases. Thyroid beneficial in 6 cases; corpus luteum in 1. Began with dose of only 0.025 gram ($\frac{1}{4}$ grain) of powdered thyroid, given in cachet once daily; later increased to 0.10 gram ($1\frac{1}{2}$ grains). Asthmatic paroxysms ceased or were greatly diminished. Also useful in asthmatic dyspnoea of renal and gastric cases and in ordinary nasal asthma or hay asthma. *Léopold-Lévi and H. de Rothschild*. 413

Adrenalin, given by hypodermic injection in the dose of 10 minims of the 1:1000 solution, found in a number of cases to relax the spasm of asthma instantly. When taken by mouth, ineffectual. In one case, adrenalin injections every evening in the hay season, served to ward off hay fever and accompanying asthma. *Melland*. 476

Bromide Intoxication. TREATMENT. Sodium chloride found very effective in relieving symptoms due to bromides in epileptics. Two grams ($\frac{1}{2}$ dram) of salt taken internally three times daily will remove bromide eruptions and overcome torpid condition of patient. Washing mouth with salt solution removes foulness of breath. Gastric disturbances in bromide users relieved by taking 1 or 2 grams of salt before each meal. Saline baths also useful. Occasional re-appearance of epileptic spasms after relief of symptoms of bromism by this method may be avoided by giving chloral hydrate, 1 to 2 grams (15 to 30 grains) daily. Twenty grams of salt daily in two patients caused prompt disappearance of pustular acne and leg ulcers due to bromides. *Ulrich*. 604.

Bronchitis. TREATMENT. Menthol and eucalyptol in intramuscular injections found effective in bronchitis, gangrene of lung and many cases of pulmonary tuberculosis. Formula: Menthol, 1 part; eucalyptol, 2; castor-oil, 10. At first inject 2 c.c. (32 minims) three or four times weekly; later double strength of preparation and reduce number of injections to twice weekly. Treatment for

four to eight weeks generally gives excellent results. *Berliner.* Page 546

Carbuncle of Face. TREATMENT. Passive hyperæmia by means of band around lower part of neck used with success in carbuncles of face and on back of neck (when high enough). Use band of rubber tissue 3 centimeters broad. Mild constriction sufficient and band should be worn 20 to 22 hours daily unless œdema appears. Relieves pain; on third day purulent discharge sets in, lasting a few days. Avoid squeezing out pus. Intervention with knife unnecessary. *Keppler.* 292

Carcinoma. TREATMENT. Quinine, stirred with water to a paste, used locally in cases of epithelioma where operation refused. Application repeated four times on alternate days. Caustic action at first exerted on ulcers, which later healed completely under simple iodoform dressing. Also useful in palliative treatment of inoperable uterine cancer. The remedy is of diagnostic value, as on ordinary erosions it does not have the destructive effect produced on cancer. *Stroné.* 94

The use of high-frequency currents found valuable in treatment of malignant growths, denuded surfaces, slowly healing wounds, and tuberculosis. On epitheliomas they exert a selective cytolytic action. Infected glands disappear, and discharge becomes odorless. Current has an analgesic effect. Time of application should never exceed 10 minutes. For internal growths current is used after operation to promote cicatrization. *Rivière.* 124

Acetone used in palliative treatment of 15 cases of inoperable uterine cancer. Hardens the tissues and stops hæmorrhage, septic absorption, and odor. After curetting under ether, solution of acetone is poured into the cavity through a conical speculum, contact with normal vaginal tissues being avoided. Hips elevated. Excess drained off through speculum and subsequently by tampon. When discharge begins again treatment is repeated without ether. Pain was not relieved but marked relief obtained from general infection. *Tovey.* 122

Carcinoma of Stomach. DIAGNOSIS. Danger-signal: middle age, loss of weight and strength, with perhaps some dull epigastric pain. If, in spite of six or eight weeks' careful treatment, symptoms increase in severity, loss of weight becomes more out of proportion to dyspepsia, appetite leaves, and some anæmia appears, diagnosis of probable malignancy is justified and operation indicated. *Deaver.* 175

Malignant disease has been demonstrated by X-rays, through its invasion of stomach-cavity and resulting changes in peristaltic waves. *Leonard.* 178

Cellulitis with Gangrene. TREATMENT. Case of diffuse phlegmon of leg with gangrene treated successfully with: 1. Linear applications of thermocautery. 2. Subcutaneous

injections of hydrogen peroxide 1 to 2 centimeters above infected area. 3. Passive hyperæmia induced thrice daily by rubber bandage above knee. 4. Daily bathing of part in warm permanganate solution. 5. Wet dressing of hydrogen peroxide. *Petit.* 173

Chancroids. TREATMENT. Cleanse lesion with gauze and water. Apply cocaine or other local anæsthetic. After five or ten minutes apply nitric acid to sore, taking care that it penetrates under the edges and into pockets. After several minutes wipe lesion dry with blotting paper. Remove slough thoroughly with sharp curette. Paint the cleansed surface with 10 per cent. silver nitrate solution till a white pellicle has been produced. Apply wet dressing. Sore will generally heal in a few days to two weeks. *Pedersen and Marsh.* 604

Chilblains. TREATMENT. 1. Measures to allay co-existing irritative influences originating in various portions of body, as the nasopharynx, teeth, respiratory or digestive tracts, etc. 2. Gymnastic exercises of extremities at hourly intervals. Arms raised above head, with alternate flexion and extension of hands and fingers. Similar movements of lower limbs. 3. Protection from cold. 4. Kneading, after raw surface of chilblain has become covered. *Jacquet and Jourdanet.* 162

Cholecystitis. TREATMENT. Irrigation with normal saline solution, at the rate of about six drops per second and with elevation of one foot, of biliary fistulæ, after drainage of gall-bladder for cholecystitis, cholelithiasis or cholangitis: 1. Produces prompt diuresis. 2. Hastens disappearance of chronic jaundice. 3. Often relieves postoperative biliary vomiting. *McArthur.* 87

Curable by diet and hygiene or operation. Cholecystostomy usually adequate. Cholecystectomy when gall-bladder gangrenous or duct completely obstructed; should be performed several months after primary cholecystostomy. *B. Holmes.* 292

Cocaine Poisoning. TREATMENT. Administer ether by inhalation, only to the degree of mild surgical narcosis or even less. Employ a mask and give anæsthetic by drop method. Probably also valuable for poisoning by stovaine or other synthetics. *Engstad.* 414

Colitis, Chronic. TREATMENT. Rectal use of hot solution of gelatin beneficial in obstinate cases of catarrhal colitis with diarrhœa. First give enema of one pint of water at 25-28° C. (77-82° F.), and when this is evacuated, have patient rest half to three-quarter hour. Then introduce through nozzle four or five inches long 40 to 80 cubic centimeters (1½ to 2½ fluidounces) of 10-per-cent. solution of gelatin in Carlsbad water (Sprudel) at 45-52° C. (113-125° F.). Patient lies on back for two hours with warm application over abdomen. Fluid usually retained. *Aldor.* 415

Collapse from Hæmorrhage. TREATMENT. Suprarenalin or adrenalin given very slowly by intravenous method. Use 5 minims of the 1:1000 solution to a pint of warm saline solution (105° F.). In urgent cases, 10 drops may be given in 1 dram of saline solution, and repeated at intervals until heart responds. Artificial respiration hastens effects. *Sajous.*

Page 75

Collapse in Infections. TREATMENT. Obscure collapse in infections often due to adrenal insufficiency. As soon as asthenia and lowered blood-pressure appear, administer adrenalin solution (1:1000) or cachets of glandular extract. In children give 10 to 20 drops of 1:1000 solution daily, divided into 5 or 6 doses. *Meizard.*

160

Constipation. TREATMENT. Appendicostomy considered as indicated in: 1. Cases of severe atonic constipation where colon much dilated and sacculated. 2. Cases of obstructive constipation where obstruction cannot be directly dealt with, e.g., where inseparable adhesions between viscera and abdominal wall. 3. Cases of congenital dilatation of the colon, as alternative to resection of bowel. Instances of favorable results from appendicostomy mentioned. *Mummary.*

415

Where hard fæces accumulated in rectum, mucous membrane excoriated, and sigmoid tender, wash out rectum and colon with several quarts of hot water containing a few drams of sodium bicarbonate, borax or boric acid, introduced slowly with patient in knee-chest position, or with hips elevated. Then inject half tumblerful of oil in rectum and leave over night. *Tyrodé.*

416

Coryza. TREATMENT. Sodium salicylate causes a cold to abort if taken within 24 to 36 hours. Single dose of 7½ grains (0.5 gram) often suffices. Taken later, it relieves symptoms and shortens attack. It is also valuable in the chronic coryza of gouty subjects. Should be taken after eating, and preferably in small doses, dissolved in half a glassful of water. *Courtade.*

174

Cystitis, Acute. TREATMENT. Collargol beneficial when used locally in this condition or in pyelitis. *Albrecht.*

234

Cystitis, Chronic. TREATMENT. 1. Where urine acid, alkaline diuretics and mineral waters; where urine alkaline, urinary antiseptics, e.g., capsule containing 5 grains each of urotropin and salol. 2. Local treatment: bladder irrigations. Empty bladder, introduce soft-rubber catheter and introduce warm solution of one grain each of silver nitrate and potassium permanganate in a pint of distilled water, until bladder comfortably distended. After evacuation, repeat the process. Then inject ½ ounce of one of silver salts, to be retained. *Christian.*

416

Delirium Tremens. TREATMENT. Veronal used in 100 cases, and all but 3 benefited. Initial dose of 1 gram (15 grains) in incip-

ient cases, repeated in 3 hours if sleep does not follow. Sleep then usually lasts 6 to 8 hours and on waking patient is quiet and feels well. If tremor is still present, 0.5 gram (7½ grains) veronal may be given. The same dose every evening prevents insomnia. Where delirium is not controlled by the first 2 grams, another gram may be given 5 to 6 hours after the second dose. One case of veronal rash noted. *Möller.*

88

Proctoclysis with hot tap water or saline solution, by Murphy's method, caused mental condition to clear up rapidly. *Sewall.*

678

Diabetes. TREATMENT. Phosphoric acid preparations valuable in diabetic cachexia. Phosphoric acid, 75 grains; acid sodium phosphate, 150 grains; distilled water, 10 ounces; one tablespoonful in water at every meal. Contraindicated where albuminuria. *Cautru.*

163

Calcium iodide used in 17 cases in doses of 5 to 15 grains three times daily, after treatment with codeine and diet had proved unsatisfactory. In all cases subjective symptoms were improved and amount of sugar in urine diminished. *H. E. Smith.*

164

X-rays projected over hepatic region cause decrease in glycosuria and rise in red blood corpuscles. In one case amount of sugar passed daily was reduced by 400 grams. Particularly effective in grave forms with emaciation and debility, less so in mild cases and those of obese type. *Ménétrier, Touraine and Mallet.*

178

Diarrhœa, Dyspeptic, of Infancy. TREATMENT. Calomel, one grain in broken doses, followed in 2 hours by castor oil, one dram. Daily irrigation of colon. If much vomiting, wash out stomach and colon, and follow by starch enema not exceeding 2 ounces. For two days give barley water, 2 fluidounces every 2 hours; for next two days, whey, 2 fluidounces every 2 hours. *Hollopeter.*

97

Digalen. This form of digitalis is not invariably free from cumulative effect, as has been claimed, but is better borne by the stomach than the galenic preparations. *Mayor.*

164

Drowning. TREATMENT. Adrenalin, 10 drops of 1:1000 solution in 1 dram of saline solution, slowly administered intravenously. Repeated at intervals until heart responds. Artificial respiration. *Sajous.*

75

Dysentery, Amœbic. TREATMENT. 1. Rest important, even using opium if required. 2. Calomel at first where patient strong, then magnesium sulphate, 1 dram every 3 hours, as long as scybala being passed. Purgatives bad, however, where initial symptoms very acute, and in late stages. 3. Ipecac, in capsules of animal membrane or salol-coated pills; 30 grains in one dose on first day, reduce by 5 grains on each succeeding day until sixth, then give 5 grains nightly for a week or 10 days longer. Patient should fast 4 hours before taking the remedy, and remain

quiet afterward. 4. Colonic irrigations hardly give better results than ipecac. Best is quinine 1:5000, increased to 1:1000; next to quinine is silver nitrate. Have fluid retained 15 to 20 minutes. 5. Appendicostomy where refractory to rectal irrigations. Marked success in 2 cases, using quinine or saline solution through fistula. Perform operation in two stages: first bring base of appendix against abdominal wall, stitching meso-appendix to peritoneum; 48 hours later, apply cocaine to appendix, snip off with scissors and introduce No. 10 rubber catheter. *Anders and Rodman.* Page 290

Dyspepsia of Old Age. DIAGNOSIS. Of every 100 cases in persons over 65 years of age, 66 are secondary to organic disease of some important organ (kidneys, prostate, heart, lungs, liver, pancreas, chronic gout, etc.); 34 are due to degeneration of gastric and intestinal secretory structures. *Fennick.* 24

Eclampsia. TREATMENT. Bilateral renal decapsulation employed in three dangerous cases with excellent results, after other measures had failed to bring on diuresis. *Lichtenstein.* 294

Eczema. TREATMENT. X-rays of value in subacute and chronic forms. In vesicular variety, mild applications suffice; in squamous and pustular eczema, more vigorous treatment required. Eczema of lips, ears, axillæ and anal region especially adapted for X-rays; itching relieved. Seborrhæic eczema of face also benefited. *Müller.* 239

Liquid air applications to chronic eczematous patches found useful. *Bunch.* 673

Emissions, Nocturnal. TREATMENT. Styp-tol (cotarnine phthalate) found to prolong interval between emissions to from one to three weeks in all cases. Two, then three, styp-tol tablets of $\frac{3}{4}$ gram each administered before retiring, for a month. Fluidextract of hydrastris, 40 to 60 drops before retiring, also recommended. *J. Koenig.* 127

Epilepsy. TREATMENT. Diet low in proteids caused reduction in number of seizures by 14 per cent. Each of the three daily meals given consisted of 125 grams of bread, 16 grams of butter, and 250 cubic centimeters of milk. *Rosanoft.* 89

Exploratory trephining advised in traumatic epilepsy. Eleven cases operated, four of idiopathic and seven of surgical epilepsy. Cysts found in two instances, cicatrices in four, and œdema of pia in all. Improvement resulted in all the cases from removal of œdematous fluid. Epileptic attacks returned in four cases. *Tilmann.* 127

Epithelioma. TREATMENT. Commercial 40 per cent. formaldehyde solution applied in two cases with successful results. After three applications dead neoplastic tissues separated, leaving granulating surface, which later healed completely. Pain obviated by injections of 1 per cent. novocaine solution. No recurrence in ten months. Method suitable

for comparatively small lesions without lymphatic involvement, where patient refuses operation. *Hallopeau and Fumouze.* 294

Extra-Uterine Pregnancy. TREATMENT. In first half of an ectopic pregnancy operation for removal of gestation sac is indicated wherever conditions permit. In latter half, however, patient, under favorable surroundings, should be allowed to go within two or three weeks of term before operation, meanwhile being kept under watch. Removal of placenta at operation is of cardinal importance; if this be impossible, placenta should be shut off from peritoneum by gauze. Dependent drainage through vagina should be secured. *Peterson.* 225

Felon. TREATMENT. Operation advised as soon as diagnosis made. Patient should eat a substantial meal before the operation, and remain in recumbent posture until half an hour after operation is over. After applying tincture of iodine, inject sterile 1 per cent. cocaine solution in a circle at root of finger; as much as 3 or 4 grams (45 minims or 1 dram) of solution may be used. If felon very small, inject instead around lesion itself, 1 centimeter from its margin. Five minutes later incise, irrigate with hydrogen peroxide and establish drainage. Rest of treatment includes bathing of part in warm peroxide (1 in 4) and sterile compresses of same. *Appelmann.* 167

Femur, Fracture of. TREATMENT. Combination of Buck's weight and pulley system with suspension by the Hodgen splint gave very satisfactory results. Traction can be accurately measured and maintained, transverse displacement corrected, and comfort greatly increased. After extension is applied, the supporting bands attached to splint are passed under limb, which is then swung clear of bed. Supporting bands are adjusted to make support uniform, and later, if desired, to exert coaptative pressure anteroposteriorly or laterally on the fragments. *Stimson.* 226

Fibroids, Submucous. DIAGNOSIS. Gradually increasing dysmenorrhœa and menorrhagia, with consequent anæmia and "nervous debility," are typical symptoms which, in a woman of thirty years or over, should lead one to suspect this condition. In differential diagnosis, enlarged uterus from subinvolution, metritis, endometritis, and pregnancy should be considered.

TREATMENT. When submucous fibroid large and sessile: hysterectomy. Vaginal operation limited to removal of polypi, owing to importance of exploration of pelvis and abdomen where tumor of some size. Transperitoneal enucleation slightly increases operative risk, but if desired by patient in order to preserve uterus, may be performed. *Truesdale.* 225

Fibrolysin. Best given by intramuscular injection in dose of 35 minims (2.3 cubic centimeters), every other day. Desired solvent effect on local connective tissues is

kept up by massage of the part. Connective tissue surrounding old infectious foci may also be affected and dormant bacilli set free; hence it is well to search for and exclude previous inflammatory disturbances in every case before using this remedy. *Stocker.*

Page 167

Furunculosis. TREATMENT. In furunculosis, carbuncles, acne and subcutaneous abscesses brilliant results from vaccine therapy can be expected. In chronic cases, best results when a fresh vaccine is prepared from the pus every two to four weeks. Cautiously increase dose at successive inoculations. *Thomas.*

161

Gangrene, Diabetic. TREATMENT. Currents of air heated to 150°, 300°, 500° C., or even higher, applied repeatedly, found to prevent extension of gangrene and arrest toxic absorption by producing carbonization of the part. Amputation can then be performed with greater safety. *Dieulafoy.*

223

Gastro-enteritis of Bottle-fed Infants. PROPHYLAXIS. 1. Certified milk or clean milk fresh from cow; if neither available, Pasteurization. 2. Fresh air. 3. Avoid overheated rooms. In hot weather child should be placed out-of-doors at night on properly screened porch. 4. Avoid overfeeding by giving boiled water to drink. 5. Light clothing and frequent cool bathing. 6. Destroy flies.

TREATMENT. 1. Withhold food for three days; then give barley-water. 2. Have child rest quietly in bed out-of-doors. 3. Wash stomach with boiled water at 100° to 110° F., with a little lime-water added. Before withdrawing tube introduce 2 drams of castor-oil and give thorough colonic irrigation. In cases seen later stomach washing not indicated unless gastric irritability present. After stomach settled give cool boiled water freely by mouth. 4. Colonic irrigations every 4 hours on first day, and later twice daily. Nutrient enemata every 4 hours, following irrigations. Be cautious with cathartics. 5. Tub-bath, lasting 10 to 20 minutes, to control temperature and restlessness. 6. Drugs: Bismuth subnitrate, 1 to 2 drams daily, in a child of one year. Salol, 1 to 2 grains every 3 hours. Opium where pain and continued frequent stools. Brandy in boiled water where prostration; ½ ounce in 24 hours. *Hulse.*

295

Glycosuria. TREATMENT. Glycosuria in elderly persons often results from only a certain few carbohydrates used in excess, especially cane-sugar and wheat-starch. Management consists in ascertaining the harmful ones and removing them from diet. Cut off all carbohydrates for a week, and if glycosuria disappears try oatmeal, at first with water containing saccharin or with butter, later with rich cream. Then try potatoes, peas, beans, etc., one by one, examining urine frequently. Open-air treatment of great value. *Vaughan.*

296

Goiter, Exophthalmic. ETIOLOGY. Acute rheumatism occupies an important place among infections which lead to development of Graves's disease. *Souques.*

165

TREATMENT. Previous to operative intervention: 1. Rest cure interrupted by systematic exercises. 2. Sojourn at some resort having elevation of 1000 to 1500 meters (3300 to 4900 feet). 3. Diet poor in albumin and fats. 4. Cool baths and lotions. 5. Internally, phosphorus, arsenic, and iron. Avoid measures producing rise in blood-pressure, as well as active diuretics. *A. Kocher.*

417

Case under observation for one year showed continued improvement under treatment with dried powdered thymus, 30 to 120 grains three or four times daily. *Gwyer.*

424

Intravenous injections of iodine and arsenic recommended. Two cubic centimeters (32 minims) of following solution to be injected repeatedly: Atoxyl, 1 gram (16 grains); iodide of sodium, 4 grams (64 grains); distilled water, 20 c.c. (5 drams). *F. Mendel.*

542

Most effective treatment is to excise largest lobe of thyroid and later apply X-rays to smaller one. Patients with goiters of moderate size usually improved considerably by X-ray treatment alone. Exposures last five minutes, three minutes from front and one minute on each side of gland in large goiters; from front only in small goiters. Frequent intermissions made where tachycardia troublesome. Exposure every other day until slight reaction of skin; stop for a week, then resume, etc. After improvement manifest, expose once a week, unless severe reactive symptoms present. Meanwhile give also Roncigno iron-arsenic water, in tablespoonful doses *t. i. d.* *Beck.*

667

Neutral hydrobromide of quinine gave good results in large series of cases. Given in 5-grain capsules to limit of endurance—3 or 4 capsules a day. Continue until all subjective symptoms have disappeared, then cut down dose even to 2 or 3 capsules a week, cautioning patient to resume former dosage at once if any symptoms reappear. *Jackson and Eastman.*

670

Gonorrhoea. TREATMENT. Vaccine therapy caused marked improvement or cure in subacute and chronic cases. Functional results good. *Thomas.*

161

Gonorrhoeal vaccines used in 51 cases and antigonococcal serum in 23. Vaccines gave good results in gonorrhoeal arthritic cases, especially when acute. In urethral adnexa cases, vaccines relieved pain and reduced discharges. Serum beneficial chiefly in acute or subacute arthritic cases, though less valuable than vaccine. Injections best given in gluteal muscles. Small doses of vaccine—10 to 30 million bacteria—usually sufficient in acute joint cases; in chronic cases, give larger doses. Of serum, begin with 2 cubic centimeters, increasing up to 6 or 8 cubic centimeters if no improvement. Best results from vac-

cines or serum when injections given about five days apart. *Schmidt*. Page 672

Hæmophilia Neonatorum. TREATMENT. Injections of fresh normal human blood-serum employed with signal success in 12 cases of "bleeding babies." Hæmorrhages arrested and loss of weight checked. Blood for injection is collected from a vein at the elbow by suction into a flask through a sterile aspirating needle of No. 19 caliber; it is allowed to coagulate with the flask in a slanting position, and the serum withdrawn for use as it separates. In cases of moderate severity, at least 10 cubic centimeters of serum should be injected, and at first repeated three times daily. In severe cases, serum to be given every two hours, and in larger amounts if necessary. *Welch*. 607

Hæmorrhage. TREATMENT. Adrenal preparations valuable in capillary hæmorrhage from pharyngeal, œsophageal, gastric or intestinal mucous membranes. Mastication of tablets of adrenal substance, or ingestion of 5-grain capsules of same, causes vaso-constriction. *Sajous*. 75

Artificial gelatin made by combining gum arabic with perchloride of iron, then sterilizing the whole, very efficient when injected hypodermically, increasing coagulability of blood more actively than calcium chloride. *Ciuffini*. 292

Hæmorrhage in Bladder Operations. PROPHYLAXIS. About fifteen minutes before operation tie off all four extremities close to the axillæ and inguinal regions with gauze bandages. When skin of extremities begins to turn blue start operation, which will be remarkably dry. Useful for prostatectomy or removal of bladder tumor. No untoward effects. Less anæsthetic is required in operation, and healing of wound seems to be accelerated. *Kolischer and Kraus*. 418

Hæmorrhoids. TREATMENT. In 3 cases of bleeding hæmorrhoids treatment by thymus, 30 to 120 grains of fresh dried gland, three or four times daily, caused great diminution or cessation of hæmorrhages, and improved state of blood. *Gwyer*. 424

Hæmorrhoids often due to proctitis. Where this is the case: 1. Arrest fermentation and overacidity with intestinal antiseptics and alkalies. 2. Prohibit rich foods, and restrict carbohydrates to relieve liver. 3. Prohibit stimulants. 4. Encourage exercise or rest as indicated. 5. Irrigate rectum daily for a week with a gallon or more of water at 110° F., each irrigation lasting fifteen minutes. In presence of subacute or chronic proctitis, follow this by injection every second or third day of a weak solution of a silver salt, or else prescribe a suppository or ointment containing ichthyol or iodoform, tannic acid, adrenalin or hamamelis, and belladonna or stramonium. *Bodkin*. 543

Hammer Toe. TREATMENT, OPERATIVE. Apply Esmarch bandage. Incision 1½ inches long at outer aspect of plantar surface of

toe, with center at flexed joint. Dissect skin flaps laterally and continue incision through subcutaneous structures, avoiding artery and nerve. Dissect flexor sheath free from joint, hold it aside, and remove articulating joint surfaces with chisel. Allow subcutaneous structures to fall back in place, hold them by a few fine buried catgut sutures, close skin incision, and dress. Apply plaster-of-Paris bandage fixing toes in hyperextension, making flexor tendons tense, and holding bony surfaces in apposition. After ten days split plaster bandage, and expose field of operation. Then restore dressings and keep in original position for six weeks. *Soule*. 352

Heart, Dilatation of. TREATMENT. In asthenic cardiac disorders with dilated right ventricle, dyspnoea and possibly cyanosis and œdema, the adrenal principle improves oxidation and metabolism in the cardiovascular muscles and tissues at large. Tablets of ½ to 2 grains of desiccated gland after meals. *Sajous*. 75

Heart, Neuroses of. TREATMENT. In cardiac irritability: 1. Caffeine citrate and tincture of strophanthus, both best given in tablet-triturate, are promptly effective. Caffeine relieves headache and vertigo when present. Cactus useful in some cases; acts more slowly. 2. Local applications, as cologne, spirits of camphor, ammonia. 3. Light and easily assimilable diet. Avoid meats. 4. Quiet and rest for weeks at a time. 5. Nerve tonic: combined glycerophosphates of lime and soda, gr. v-x t.i.d. after meals. 6. Where gastric or intestinal intolerance: milk of bismuth or lactobacilline tablets. 7. To promote sleep: gentle massage of lower limbs before retiring. If hypnotic required, bromural, gr. v-x. *Beverley Robinson*. 163

Hernia. TREATMENT. A truss never cures a hernia in adult life, and rarely during childhood. Losses from disability due to hernia avoided only by early radical operation. *A. C. Wood*. 20

Hernia, Strangulated. TREATMENT. Scopalamine hydrobromide used to paralyze motor ganglia of intestines. Gases in strangulated portion pass beyond seat of constriction, and reduction is facilitated or occurs spontaneously. Dose not to exceed ½ or ¼ grain. Method contraindicated in children. *Luzardo*. 672

Hyperchlorhydria. DIAGNOSIS. Excess of free HCl alone does not warrant a diagnosis of primary hyperchlorhydria, which shows variable symptoms, both gastro-intestinal and nervous. Though 31.6 per cent. had lost weight, the appetite was generally good and examination of the gastric contents and feces showed that digestive power was but little impaired. The nervous manifestations included periods of depression and mental confusion, irritability, various phobias, numbness, paræsthesias, and attacks of faintness.

Male sex and constant mental strain seemed to be predisposing factors. *G. M. Piersol*.
Page 65

TREATMENT. Aluminium silicate in the form of neutralon found effective in all cases of gastric hyperacidity or hypersecretion, whether of neurotic or organic origin,—especially where persistent hypersecretion with motor insufficiency. It reduced acidity, relieved pain and aided digestion. Acts as a protective and astringent to mucosa. Dose, $\frac{1}{2}$ to 1 dram in 3 ounces of water, $\frac{1}{2}$ to 1 hour before meals. *Rosenheim and Ehrmann*. 352

Ileus, Paralytic. **TREATMENT.** Atropine found valuable in 8 cases. Inject 1 milligram ($\frac{1}{64}$ grain) hypodermically and follow shortly after by a stronger dose of 3 to 5 milligrams ($\frac{1}{22}$ to $\frac{1}{12}$ grain). Improvement and abundant faecal discharge within ten hours. *Lederer*. 229

Infant Feeding. Salts of cow's milk sometimes cause tendency to convulsions; treat by temporary salt-free diet. Sugar intoxication or intolerance of fats may likewise exist; treat by elimination of these from diet. *Neff*. 24

Insomnia. **TREATMENT.** Pituitary preparations especially indicated when there are low blood-pressure, general weakness and chilliness, and patient is quiet. Dried pituitary extract, in doses of 0.20 to 0.40 gram (3 to 6 grains), taken an hour or less before retiring, found promptly effective. Best used intermittently, since action fugacious. When it is found that hypnotic effect is being lost, small doses of trional or veronal may be given to sustain it. *Sardou*. 545

Intestinal Protein Indigestion. **TREATMENT, DIETETIC.** Cut proteins to a minimum, give chiefly cereals and other starches, and supply assimilable fats guardedly. A little lean meat or milk, or vegetables rich in protein may, however, be allowed to avoid loss of weight. Gelatin, junket, whey, and buttermilk often valuable. Fermented milks especially useful when stomach also deranged and in gout and arteriosclerosis. Where hyperacidity and spasmodic pain prominent, give hot olive-oil. Forbid tea, coffee, and alcohol, and encourage drinking of distilled water. **MEDICINAL.** 1. Cleanse bowel at once with calomel or calomel and podophyllin, followed by a saline. To keep bowel clean, use phenolphthalein in tablet form or as syrup; one or two tablets every night sufficient, and later to be reduced in frequency. Foods like shredded wheat, also systematic deep breathing, will assist drugs. 2. Bile-salts, as cholagogue and to relieve such symptoms as offensive breath, coated tongue, etc. 3. Ferments, kept up several months. Alkalies where fat not well digested. 4. Intestinal antiseptics, as salol, naphthalene tetrachloride, some guaiacols, creosote, sulphocarbolates, or agar soaked in hydrogen peroxide and flavored. 5. Where hyperchlorhydria, give eumydrin ($\frac{1}{65}$ grain or 0.001 gram *t. i. d.*), combined with sodium

citrate. Where deficient gastric secretion, try suprarenal extract, or the old and well-known measures. 6. Tonics, especially at outset, avoiding strychnine. *Thayer and Turck*. 418

Intussusception. **TREATMENT.** Lateral anastomosis performed in 2 acute cases and advocated in preference to resection because of its comparative simplicity and safety. Tumor was found to disappear subsequent to operation. Not applicable, however, to gangrenous cases. *Parry*. 125

Iodine. As skin disinfectant. Some hours before operation field is shaved dry and painted with 10 or 12 per cent. tincture of iodine. Dry sterile dressing. Painting repeated on operating table. Author shaves and thoroughly cleanses skin 12 hours before iodine applied. Primary union in every case. *Jewett*. 63

Larynx, Fracture of. **TREATMENT.** Cases divided into three groups according to indications for tracheotomy: 1. Mild cases; fracture often incomplete and detected only on careful palpation. Keep patient under close watch. 2. Serious cases; marked dyspnoea, sometimes hæmoptysis. Immediate tracheotomy indicated. 3. Cases of intermediate severity. Preventive tracheotomy should be practised whenever patient cannot be kept constantly under watch. *Michel*. 351

Lead Poisoning. **TREATMENT.** Severe case with encephalopathy in which purgation, baths and lumbar puncture failed to quiet patient. Fixation abscess formed by injecting 30 minims of turpentine-oil in thigh. Cerebral excitation diminished next day. Rapid general improvement. *Van Haecke and Leclercq*. 673

Leprosy. **TREATMENT.** Oil of chaulmoogra is best given as a saponified preparation, in keratin-coated pills; the purified oil can also be injected in doses of 1 gram three times a week. Nastin injected in doses of 1 cubic centimeter gave good results. Great persistence in treatment, even after relief of symptoms, found advisable. Local treatment by resorcin, hydrogen peroxide, ichthyol, thiosinamine, etc., and baths, also useful. *Kupffer*. 169

Leukæmia. **TREATMENT.** In leukæmia of essentially splenic type, Roentgen ray treatment, skillfully employed, is the most prompt and certain means of reducing leucocytosis, bettering anæmia and improving general health. Iron and arsenic still believed to have a place in the treatment. *Wilcox*. 387

Lupus Erythematosus. **TREATMENT.** Constitutional: regulation of diet to avoid overloading intestine; coffee or tea contra-indicated; quinine often useful. Local: in hyperæmic stage, cooling lotions and ointment of subacetate of lead, ichthyol lotion or ointment; in chronic cases, strong solution of ichthyol or iodine liniment; in severe conditions, linear scarification or light touches of thermocautery. High-frequency currents in

subacute cases, Finsen light, X-rays or radium in chronic cases: particularly useful where thickening of the integument. *Morris*.
Page 63

Liquid air applications found to give excellent results. *Bunch*. 673

Malarial Fever. TREATMENT. Following measures found best in treatment of tropical malaria: In mild æstivo-autumnal infections, give 3 grains of calomel on admission, with 20 grains of quinine in solution or capsules. Follow calomel by salts next morning. Give 10 grains of quinine t. i. d. for a week, then reduce dosage to 5 or 10 grains per day. To relieve headache, ice-cap. On discharge patient is advised to take 10 or 15 grains of quinine once a week for a few weeks. In severe æstivo-autumnal infections, nausea and vomiting prevent administration of quinine by mouth; therefore give it hypodermically: Make skin of buttock surgically clean, boil needle and syringe but not quinine solution; plunge needle deeply into muscle at right angles to skin, and inject slowly. Close puncture wound with collodion. Abscesses very rare. Give 15 grains of quinine, hypodermically, every four hours up to 75 grains, or until vomiting has ceased. Sometimes after first or second injection all symptoms are relieved; stop injections and give 10 grains t. i. d. in solution or capsule. Tablets often not absorbed. *Shook*. 336

Meningitis. TREATMENT. Early relief from excessive intracranial pressure by means of lumbar puncture advocated in treatment of uncomplicated cases of all forms of meningitis, including tuberculous. Earliest possible recognition of pressure symptoms required, for which purpose total and differential leucocyte counts are of value. Four cases of meningitis reported (including one tuberculous), which recovered after lumbar puncture. *Hultgen*. 298

Meningitis, Cerebrospinal. TREATMENT. Case of an infant two months old reported, in which tapping of lateral ventricles and intraventricular injections of antimeningococcus serum led to complete recovery. *Fischer*. 129

Antimeningococcus serum used in 103 cases. Found to shorten disease, attenuate symptoms and reduce number of complications. Organic sequelæ in only 9.3 per cent., as against 28.5 per cent. in previous cases treated without serum. Consecutive psychic disturbances rare. *Netter*. 680

Metrorrhagia. TREATMENT. Excessive menstrual discharge in young girls, due to blood changes, often arrested by following: Subcarbonate of iron, 0.10 gram ($1\frac{1}{2}$ grains); ergot (Bonjean), 0.05 gram ($\frac{3}{4}$ grain); quinine hydrobromide, 0.01 gram ($\frac{1}{12}$ grain); extract of belladonna, 0.005 gram ($\frac{1}{12}$ grain); two pills before meals. *Huchard and Fiesinger*. 298

Myasthenia Gastrica. TREATMENT. 1. Remove causative factors, as excesses or nerve-strain, if these are evident. 2. Exer-

cise, either out-of-doors, or as special movements to strengthen abdominal muscles. Follow morning exercises with cold shower bath or plunge. 3. Rest in bed for a week, where muscular relaxation marked. If this not possible, use some form of abdominal support, as by Rose's belt of adhesive plaster, to be worn two weeks. 4. Gastric lavage with cool saline solution, not exceeding eight ounces. 5. Mixed diet, consisting of carbohydrates in the form of cereals, toast, rolls and crackers, and vegetables; proteids, as meats, eggs and milk; fats, as butter. Cooked fruits and a little ripe raw fruit allowable. Interdict sweets, and limit fluid intake to 6 ounces with each meal. Avoid overloading stomach at any given time; allowing three light supplementary meals daily, if necessary to secure this end. Patient should lie down for one hour after meals. In severe cases, rectal feeding for a few days. 6. Drugs. The best are strychnine phosphate, gr. $\frac{1}{30}$, extract of ergot, gr. j, extract of coca, gr. ij, extract of physostigma, gr. $\frac{1}{6}$, and hydrastin hydrochlorate, gr. $\frac{1}{4}$, taken fifteen minutes before meals. *Chace*. 356

Nævus. TREATMENT. Small, red, arterial nævi respond well to radium. Large, superficial, purple, capillary nævi indicate use of mercury quartz lamp. Mixed nævi of moderate size should be treated by both methods. Give not more than two or three exposures with radium, nor more than four or five with lamp. Time of application not to exceed one hour. Results better than with X-rays. *Kromayer*. 420

Liquid air, applied for five to seven seconds by means of cotton swab of same size as lesion, an excellent method of treatment for fairly large stellate and capillary nævi, superficial pigmentary nævi, etc. After application a vesicle forms, which should be evacuated aseptically, or covered with a zinc ointment dressing. For smaller lesions, freezing with solid carbon dioxide useful; duration of application twenty to forty seconds. *Bunch*. 673

Nausea, Postanæsthetic. TREATMENT. Olive oil given by mouth in thirty cases of ether anæsthesia, after partial restoration of consciousness. In only one patient was nausea observed after its use. Where nausea had already begun it was at once checked by administration of the oil. *Graham*. 91

Nephritis, Acute. SURGICAL TREATMENT. Case of severe acute nephritis in a man 25 years of age, with no urine passed for 5 days, saved by decapsulation of both kidneys (Edebohl's operation). A few hours after operation both kidneys resumed function. *Karo*. 43

Nephritis in Childhood. TREATMENT. 1. Diet. For two days prohibit all food, giving only 500 or 600 grams (1 pint or 20 ounces) of water, sweetened with table- or milk-sugar, daily. Then give 500 grams of milk and

same amount of water. When condition becomes subacute, add carbohydrates, as preparations of flour, potatoes, etc. Add sugar to milk; when distasteful, dilute milk with Vichy, or give it alternately raw and boiled. Where milk diet not tolerated or results poor, try salt-free diet, omitting proteids and limiting milk to small amounts. Later, if no complications, lean ham, fresh pork, lamb and chicken may be given. Milk should not be taken with meals. 2. Rest in bed and avoidance of exposure. 3. Stimulate skin by general rubbings, gentle massage and tepid baths. Hot pack. 4. Dry cupping, wet cupping, or leeching over triangle of Petit. 5. Systematic disinfection of mouth, nasal fossæ and pharynx, and treatment of skin lesions as possible portals of infection. Where excretory insufficiency appears: 6. Hot air or vapor baths. 7. Drastic purgative, followed by laxative. When signs of intoxication appear: 8. Theobromine, 0.5 gram, at most 0.75 gram ($7\frac{1}{2}$ or $11\frac{1}{2}$ grains) at a dose in child of 10 to 13 years. Powdered squill, digitalis and scammony, 0.025 gram ($\frac{3}{8}$ grain) of each in a pill, given 2 or 3 times daily. If circulation weakens, digitalin or infusion of digitalis. Convallaria or convallamarin. Sparteine in the dose of 0.04 or 0.05 gram ($\frac{3}{4}$ or $\frac{1}{2}$ grain) in the 24 hours. *Hutinel*. Page 357

Nephritis, Chronic Interstitial. TREATMENT. 1. Diet. Fairly full diet combined with free elimination usually gives best results. A little meat with short fiber (as mutton, chicken) may be allowed at noon, and in morning or evening some fish; vegetable food, preferably farinaceous; milk freely; stimulants prohibited. Urine and general condition of patient should be watched in relation to diet. 2. Hygiene. Freedom from anxiety and overwork; moderate exercise; warm, dry and equable climate. 3. Physical measures. Free sudation by hot-air baths, vapor baths, or hydrotherapy, carefully avoiding renal congestion. 4. Drug therapy. Sodium iodide, gr. xv-xxx; sodium phosphate, gr. xxx-xxlv; sodium chloride, gr. xc; water, Oij; to be taken freely as a drink. Purgatives. Where marked anemia: Basham's mixture or triple arsenates, with nuclein. In failing compensation: digitalin combined with a vasodilator, as one of the nitrites (at first in small doses). Veratrine (0.5 milligrams or gr. $\frac{1}{134}$ every half hour until pulse relaxed) is a safe and effective vasodilator for continued use. In bad cases opium in small doses (2 to 4 minims of deodorized tincture) strengthens heart and dilates arterioles. When complications occur, stimulants, diuretics, purgatives and diaphoretics may be indicated. In dyspnea, quabrachine hydrochlorate or aspidospermine valuable. *Butler*. 171

Neuralgia. TREATMENT. One to two grains of 1 : 1000 adrenalin ointment applied to skin over affected area in neuralgia and neuritis

produces ischæmia of the hyperæmic nerves and thus arrests pain. *Sajous*. 76

Neuritis, Multiple. TREATMENT. Subcutaneous injections of arsenic caused marked improvement or cure in 5 cases. Formula used: Sodium cacodylate, 1.5 grams (23 grains); cocaine hydrochloride, 0.1 gram ($1\frac{1}{2}$ grains); liquid phenol, 3 drops; distilled water ad 50 grams ($1\frac{3}{4}$ ounces). Began with 0.4 cubic centimeter (7 minims), dose injected being increased by 0.1 cubic centimeter ($1\frac{3}{4}$ minims) daily until 2.0 cubic centimeters (32 minims) reached; this amount continued for two weeks, then reduced gradually to 0.4 cubic centimeter. *Willige*. 421

Noma. ETIOLOGY. Ulcerative stomatitis offers a good soil for development of noma. A streptothrix is regularly present in noma, showing thick mycelium at edge of lesion with fine rods and spirilla extending into adjacent tissues. This organism is probably direct cause of noma. It is present already in the pregangrenous stage.

TREATMENT. Radical treatment is to be practised in pregangrenous stage; thorough use of actual cautery over ulcer and adjoining tissue. When ulcer spreads, best results are obtained by conservative measures: applications of hydrogen peroxide, pure alcohol, and potassium chlorate. General anæsthesia contraindicated because of danger of pulmonary infection; cauterization or removal of specimens can be done painlessly. *Neuhof*. 421

Obesity. TREATMENT. Strict vegetable diet for 4 to 6 weeks, then 150 to 200 grams of lean boiled meat 3 times a week or once daily. This diet kept up for months, and tends to protect from returning corpulence. If weight begins to increase, drop meat again for 4 to 6 weeks. Such diet best corrects obese tendencies without impairing general health. Supplement by exercises and hydrotherapeutic measures. *Albu*. 25

Osteomalacia. TREATMENT. In a case of non-puerperal osteomalacia, after two years in bed and failure of all other measures, suprarenal extract given according to Bossi's technique. From 8 to 10 injections of 1 cubic centimeter made each month. By the thirtieth injection great improvement was manifest, and in time the entire syndrome arrested, with almost complete restoration of function. *Bernard*. 92

Otitis Media, Chronic. TREATMENT. Perhydrol in 2 to 6 per cent. solution found useful. Patient drops solution into ear and remains on side for 10 minutes; auricle is then dried and cotton inserted in meatus. Where much suppuration, repeat morning and evening. Inspissated pus is dislodged, and cholesteatoma also yields. *Bresgen*. 125

In late stages:—If tube diseased: inflation, with bougie if stenosis exists. Intratympanic injections of menthol oil, iodine solutions, pilocarpine, menthol giving best results. Where fixation of the ossicles: pneumo-mas-

sage; injection of fibrolysin sometimes valuable. Operative measures: mobilization of the malleus, synectotomy and tenotomy of the tensor tympani, eventual excision of the malleus and incus. *Yearsley.* Page 61

Case of subacute otitis media, complicated by suppuration of ethmoid sinus, in which hexamethylenamin (5 grains t. i. d.) caused rapid and marked improvement. *E. J. Brown.* 353

Instillations of silver nitrate solution advocated in chronic suppurative cases. Cleanse suppurative area thoroughly by syringing, wiping and suction. If perforation very small, enlarge it. With ear horizontal, instill enough silver solution to nearly fill external canal. Keep head horizontal five minutes, dry canal, and insert cotton or gauze wick. Repeat from every other day to once a week. Begin with 3-per-cent. silver nitrate solution, and, if necessary gradually increase strength up to 20 per cent. *Richards.* 674

Paralysis, General. TREATMENT. X-rays used to destroy new cell-formations occluding capillaries in early paresis. Good results apparent after 10 to 15 applications of ten to fifteen minutes each, covering three or four weeks. Intellect brought back to normal in each case. *Severéanu.* 675

Pellagra. TREATMENT. 1. Liberal diet, especially flesh proteins. Use only best quality flour. When diarrhœa becomes severe, avoid foods yielding irritating residues. 2. Fowler's solution, 2 parts, with saturated potassium iodide solution, 1 part, in ascending doses up to physiological limit (Dorsey). Atoxyl hypodermically in large doses, $\frac{1}{4}$ to $\frac{1}{2}$ gram (4 to 8 grains), given every third or fourth day, and arsenate of iron on other days (E. J. Wood). 3. For diarrhœa: bismuth, beta-naphthol and resorein combined in Mist. rhei et sodæ; this failing, opium, tannin or large doses of bismuth subgallate. 4. For vertigo: tincture of cocculus orientalis, 3 to 5 drops daily, carried slowly up to 30 drops. 5. For rashes or sloughing of skin: zinc oxide or 2-per-cent. boric acid ointments. 6. For burning of hands and feet: ice-cold compresses of mild solution of mercury bichloride. 7. For sore mouth: thymol, 1 grain to the ounce of water with a little alcohol, or boroglycerin solution, 25 per cent.; touch aphthous spots with 2-per-cent. silver nitrate every other day. 8. For hypochlorhydria: lavage every other day with saline solution, then 1:1000 boric acid, sodium salicylate, thymol, creolin or ichthyol, then plain water. 9. In desperate cases: direct transfusion of blood. *Niles.* 676

Pelvic Inflammation. TREATMENT. Abscess. Simple vaginal incision with drainage; if condition becomes worse, abdominal section, by extraperitoneal method if possible, should be attempted. *Esch.* 62

Hot mud compresses over abdomen recommended in chronic exudative adnexal inflammations and pelvic exudates. The heat is much better borne than in hot-water appli-

cations, and 10° C. greater heat can be applied. If surface be covered with woolen cloths, heat retained for several hours. Causes hyperæmia and promotes removal of exudate. Contraindicated in acute cases. *Cukor.* 63

Pemphigus. TREATMENT. Quinine in large doses used in two severe cases with pronounced benefit. One patient was given 23 grains daily for two weeks, then 31 grains daily. No tinnitus, vertigo or vomiting resulted. *Bergth.* 230

Pericarditis. ETIOLOGY. Myocardial degeneration, leading to dilatation, predisposes to pericarditis. Overaction of heart may induce pericardial inflammation. Chronic adhesive pericarditis frequent but often impossible of diagnosis, serious symptoms arising only when myocardium itself is diseased. *Brooks and Lippencott.* 26

Peritonitis. PROGNOSIS. Degree of improvement in circulation caused by intravenous saline infusion is an index of the extent of vasomotor paralysis, the effect persisting in proportion to recuperative power of vessels. If infusion causes no circulatory improvement little benefit can be anticipated from operation. *Lichtenberg.* 126

TREATMENT. Restrict the amount of tamponing and never insert a tampon between loops of intestine. Fowler position always exerts favorable influence. *Dege.* 64

Measures recommended for inhibition of peritonitis: 1. Gastric lavage immediately, where nausea, vomiting or gaseous distention (except where peritonitis follows perforation of stomach or duodenum). 2. Rectal instillation of normal saline by drop method, continuing for 1 to 2 hours, then interrupting for 2 hours. Where this method not practicable, give 500 to 1000 cubic centimeters of saline solution subcutaneously, repeating as required to relieve thirst and keep vessels filled. 3. Fowler position. 4. Large, hot, moist dressing of saturated boric acid solution and alcohol in equal parts applied to abdomen. 5. Give no cathartics or food by mouth; even prohibit water till patient on way to recovery. Feed by enemata consisting of 1 ounce of concentrated liquid food in 3 ounces of normal saline; add 10 to 50 drops of deodorized tincture of opium to each feeding till no longer painful. Administer slowly every 3 or 4 hours through rubber catheter introduced not more than 3 inches. *A. J. Ochsner.* 360

Two cases of diffuse suppurative peritonitis treated, after operation, by means of Fowler posture and colonic irrigation by way of cæcum, with recovery. Appendix amputated, catheter introduced into cæcum through its stump and secured by purse-string suture. One to 1½ pints of saline solution run in every two hours. Free liquid fecal evacuations secured through the catheter, and should be continued till free evacuations by rectum re-established. Avoids intestinal

paresis from gas retention, and promptly relieves toxæmia. Predigested foods may be administered through cecum with certainty of their being absorbed. *Allaben*. Page 547

Peritonitis, Tuberculous. TREATMENT. Air injected in peritoneal cavity after paracentesis in three cases of the exudative type, with recovery. After removal of exudate by trocar, air is forced in by emptying water from a large syringe into the aspirator jar. *Florio*. 238

Placenta, Premature Detachment of Normally Situated. TREATMENT. Rupture of membranes and rapid delivery not to be done till uterus contracting, patient rallied, and os somewhat dilated. Where no contractions, no dilatation, and patient in collapse, use tampon and binder until patient and uterus have recovered. This enables uterus to withstand pressure of blood within it and so controls hæmorrhage. *Goldstine*. 300

Pleural and other Effusions. TREATMENT. To prevent recurrence, after aspiration, of serous effusions into the pleura, peritoneum, tunica vaginalis, etc., 8 minims to 2 drams (according to size of cavity) of suprarenalin or adrenalin in four times the quantity of saline solution may be injected into the cavity. *Sajous*. 76

Strong galvanic currents employed in serous effusions, using as positive electrode a cotton wad soaked in 10 per cent. sodium bicarbonate solution and as negative electrode one soaked in 5 per cent. tartaric acid. Daily applications of one hour, with current of 15 or 20 milliampères, gradually and cautiously increased up to 50 or 60. Fluid promptly reabsorbed in many cases of peritoneal, pleuritic and even pericardial effusion. *De Renzi*. 234

Pneumonia. TREATMENT. Venesection recommended in cases with signs of progressive dilatation of right heart, even where patient far from robust. Always gives some relief and is often followed by recovery if done before right heart too greatly distended. If full stream of blood can be obtained, 6 to 10 ounces will suffice, and bleeding may be repeated in thirty-six to forty-eight hours if necessary. If stream small, little good results, because tension lowered too slowly. *McPhedran*. 332

Proctoclysis with hot tap water by Murphy's method usually followed in a few hours by abatement in signs of toxæmia and improvement in mental condition. Bag elevated 6 to 8 inches above anus. *Sewall*. 678

Poliomyelitis, Epidemic. PROPHYLAXIS. Nasal and buccal secretions should be disinfected. *Fleener and Lewis*. 231

Puerperal Infection. LOCAL TREATMENT. In ulcerative endometritis, vaginal douching and drainage of uterine cavity. Where retained material with normal temperature, or where serious hæmorrhage, prompt evacuation of uterine cavity. Where moderate fever and

general condition good, delay interference a few days to a week, awaiting spontaneous evacuation. Where high fever or severe toxic symptoms, especially if virulent streptococci in vaginal discharges, curet. If symptoms of extra-uterine infection, strictly avoid curet-tage (unless serious hæmorrhage). Curettage, where indicated, best done with finger. *Winter*. 300

GENERAL TREATMENT. Apparently hopeless case of post-partum streptococæmia saved by hypodermic injections of normal blood-serum. Initial dose, 20 cubic centimeters; on subsequent three days, 10 cubic centimeters each. *Welch*. 608

Pyelitis in Infants. DIAGNOSIS. Of 9 cases in children ranging in age from 9 months to 2½ years, 6 had high fever; 5, frequent micturition; 3, chills; 1, pain, and 1, tenderness in lumbar region. None vomited. Diagnosis depends on urinary findings: pus, epithelial cells, occasionally blood-corpuscles, and no casts.

TREATMENT. Urotropin, ½ to ¾ grain every two hours, very effective. *Gray*. 174

Pyloric Spasm of Infants. TREATMENT. High rectal instillations of Ringer's fluid (sodium chloride, 7.5 grams; potassium chloride, 0.42 gram; calcium chloride, 0.24 gram; boiled water, 1 liter) gave good results. Half a liter of solution is introduced in 2 hours, and the procedure repeated morning and evening. Vomiting ceases after a few days' treatment. *Rosenstern*. 232

Pyloric Stenosis, Congenital. TREATMENT. Fat-free feedings advocated, vomiting and hyperperistalsis having thereby been caused to subside in 2 cases. First give a tapioca preparation, alternating with a suspension of flour in water; then give latter alone. Flour employed to contain not over 5 per cent. fat. Add occasional nutrient enemata of albumose and sugar to keep up infant's weight. After several days return to normal amount of food—more or less gradually, according to severity of case. *Nolf*. 424

Radium. Permanent radium emanations can be established in certain organs, the blood, or the whole body, at will, by injecting finely divided radium sulphate suspended in saline solution isotonic with blood. Therapeutic results obtained: 1. Relief of pain in malignant growths, deep infections, tuberculous meningitis, etc. 2. Diminished inflammatory œdema around malignant growths, tuberculous lesions, infected glands, etc. 3. Occasionally general improvement in tuberculous patients. 4. Retrogression of benign growths, as keloids. *Dominici*. 361

Rheumatic Heart Disease. DIAGNOSIS in children. 1. Subcutaneous nodules generally indicate active cardiac disease. 2. Evening fever without previous cause suggests fresh cardiac inflammation. 3. Joint pains. 4. Sudden appearance or increase in anæmia. 5. Persistently frequent pulse. *Carr*. 26

Rheumatism. DIAGNOSIS. Enlargement of thyroid gland claimed to be a diagnostic sign of rheumatism in children. Whenever it is present in childhood, presence of rheumatism should be inquired into. *Clemens.* Page 482

Scarlatina. TREATMENT. Saline proctoclysis by Murphy's method used in 4 cases with admirable results. *Sewall.* 678

Scurvy, Infantile. TREATMENT. 1. Orange-juice, 1 tablespoonful or more every two hours; grape-juice and lemon-juice less valuable. 2. Feed child on uncooked or freshly boiled milk. 3. Plenty of water to drink. 4. Rest; avoid handling the child. 5. Fresh air. 6. Mashed potatoes or potato soup (Comby, Still); fresh brewers' yeast (Baginsky); sodium lactate (Wright). 7. Iron, arsenic and cod-liver oil late in disease where marked anæmia or exhaustion. *Ostheimer.* 545

Septicæmia. TREATMENT. In the presence of persistently low blood-pressure, hypothermia, and cyanosis, adrenalin is valuable when very slowly administered intravenously in the proportion of 5 minims of the 1:1000 solution to a pint of warm saline solution (105° F.). It enhances pulmonary and tissue respiration and the activity of the immunizing process. *Sajous.* 75

Collargol found valuable in septicæmia and pyæmia of medium gravity, as well as in obstinate febrile states due to reabsorption of toxins and associated with anæmia. Should be given in all cases of puerperal infection. It is best administered by slow intravenous injection of 1 to 2 c.c. of a 5 or 10 per cent. suspension. Probably acts as a catalytic, accelerating oxidation. *Albrecht.* 234

Shock. TREATMENT. Suprarenalin or adrenalin, very slowly administered intravenously; 5 minims of the 1:1000 solution to the pint of warm saline solution (105° F.). In urgent cases, 10 drops may be given in 1 dram of saline solution. Artificial respiration hastens effects. *Sajous.* 75

Shock, Postoperative. PROPHYLAXIS. Pituitary extract (1 cubic centimeter of 20-per-cent. solution of posterior lobe) was injected in three cases before complete recovery from the anæsthetic, in conjunction with normal saline by rectum. The pulse, previously barely perceptible, almost at once became large and bounding, slow, and regular, effect lasting 12 to 16 hours. *Wray.* 93

TREATMENT. In shock after abdominal operations, remove two skin-sutures near navel and insert glass tube joined by rubber tubing to receptacle containing saline solution at 112° F. Pass the tube upward beneath omentum and transverse mesocolon to region of solar plexus, and run in one pint of hot saline, causing rise of blood-pressure by heat and pressure stimulation of sympathetic system. Remove tube, cover

wound with gauze, and apply binder to sustain pressure. Inject 10 ounces of hot saline in rectum every 2 hours. *Hopkins.* 159

Sinus Disease. TREATMENT. Case of chronic suppuration of antrum in which the discharge and subjective symptoms were greatly relieved by 5-grain doses of hexamethylenamin three times daily. *E. J. Brown.* 353

Skin Growths and Ulcerations. TREATMENT. Powdered potassium permanganate used as a caustic for benign and malignant neoplasms, lupus, keloids, chancreoids, cavernous angiomas, etc. Surrounding healthy skin is protected by rings of adhesive plaster piled one over the other, with central opening slightly larger than area to be cauterized. Powdered permanganate is then poured in and covered over with adhesive. After 48 hours, a softened mass alone remains of the growth. Upon removing this a sharply defined depression is revealed, which heals rapidly. The procedure is usually painless. *Finck.* 232

Status Lymphaticus. TREATMENT. X-rays, applied both anteriorly and posteriorly over region of thymus in 2 cases, caused decrease in size of thymus, relief of cough and stridor, improved general condition, and rapid disappearance of lymphocytosis. Exposures of three to eight minutes about twice weekly for six weeks. Discontinue when lymphocytosis gone. Follow with iron injections, careful feeding and fresh air. *Rachford.* 680

Suprarenin. Poisonous dose varies with the individual. Danger arises from: 1. Concentration of solution used. Large amount of a weak solution is without danger. 2. Method of introduction. Intravenous injection gives immediate bad effect; locally or subcutaneously it is well borne. Author employs solution of 0.64 gram suprarenin borate in 100 cubic centimeters of 0.5 per cent. novocaine, made up fresh from tablets for each operation; 125 cubic centimeters of such solution used without danger. *Braun.* 127

Syphilis. TREATMENT. Mercurool found useful to alternate with the protiodide and in cases where the ordinary preparations of mercury cannot be assimilated; gr. j three or four times daily. Author advocates course of twenty inunctions of the official ung. hydrarg. at the outset of every case of syphilis, before beginning internal administration. Where latter causes serious gastro-intestinal disturbance, and the symptoms of the disease are marked, inunction treatment is to be adopted. Course of three weeks of inunctions in the spring and fall for four or five years recommended. In cases of ulcerating tubercular syphilodermata and gummata best results obtained using potassium iodide (gr. x-xx t.i.d.) along with mercurial inunctions twice daily. Mercury is as valuable in tertiary as in secondary syphilis. *Christian.* 45

Syphilis curable in a month when seen within twenty days after infection. Disease

abruptly checked and apparently entirely eradicated, in a series of 41 cases, by following method: As soon as diagnosis made by finding *spirochæta pallida* in scrapings from lesion, inject latter daily with a neutral preparation of hectine (0.20 grams; 3 grains) or with cyanide of mercury (0.0025 to 0.0050 grams; $\frac{1}{24}$ to $\frac{1}{12}$ grain). Hectargyre, which contains 0.10 gram ($1\frac{1}{2}$ grains) of hectine to 0.002 gram ($\frac{1}{30}$ grain) of cyanide may also be used. In addition, give general treatment in form of subcutaneous injections of benzoate of mercury and potassium iodide. Continue treatment for thirty days, though twenty days may prove sufficient. *Hallopeau*. Page 616

Sodium cacodylate, injected intramuscularly in doses of 1 to 2 grains, had striking effects on chancre, syphilides, mucous patches, palatal ulcers, adenopathies, etc. *Spirochetes* disappeared from chancre in forty-eight hours. *Murphy*. 681

Ehrlich-Hata "606" used in 14 cases; 0.3 grams injected subcutaneously below shoulder-blade. Remarkable effects on all lesions. No relapses in three or four months after injections. Serum reactions, previously positive, became negative in all patients tested. *Nichols and Fordyce*. 681

Tabs. TREATMENT. Strychnine in gradually increasing doses arrested progress of the condition in almost all cases. Begin with $\frac{1}{30}$ grain *t.i.d.*, increase to $\frac{1}{20}$ at end of first week, to $\frac{1}{16}$ at end of second, then add one drop of a solution of 1 grain of strychnine in 1 ounce of water. Increase by a drop every day till total dose is $\frac{1}{8}$ grain *t.i.d.*, which is maintained for 3 months. Then increase as before until $\frac{3}{16}$ is reached, maintain for 3 months, etc. Maximum dose of $\frac{1}{2}$ grain being reached, it is maintained for a year, then gradually reduced. Results obtained: pains disappeared, bladder and bowel control regained, locomotion much improved; general amelioration. *Hammond*. 236

Tetanus. PROPHYLAXIS. While 1500 units of antitoxin will prevent tetanus in wounds without severe mixed infection, it may fail when used only once when there is mixed infection lasting over 10 days. In such cases antitoxin should be repeated every week while infection lasts. *Rowan*. 364

Tetany. TREATMENT. Infundibular extract (20 per cent.) of Burroughs, Wellcome & Co., recommended; given by intramuscular injection in doses of 7 drops *t.i.d.*, or oftener. If used subcutaneously it might cause necrosis of skin by vasoconstriction. Not poisonous. *Ott and Scott*. 99

Tetany, Gastric. TREATMENT. Soluble calcium salts rapidly control symptoms in the tetany of gastrectasis; continued use required. Large saline infusions, as well as parathyroid preparations (nucleoproteid) by the mouth, are but slightly effective. *Kinnicutt*. 123

Tic. DIAGNOSIS. True tic, which is of psychic origin, and is a sequel to the unin-

dered repetition of a once voluntary purposive act, is distinguished from spasm, which is due to irritation of any reflex arc of the bulbospinal tract, as follows: 1. Movement slower. 2. Occurs in volleys. 3. No muscular weakness. 4. Reflexes normal. 5. Painless. 6. Disappears in sleep. 7. Pseudo-coördinate and intentional. 8. Influenced by volition or emotion, and followed by satisfaction. Upon this distinction depends whether treatment shall be surgical, medical or psychotherapeutic. *T. A. Williams*. 5

Toxæmia of Pregnancy. TREATMENT. Failure of thyroid gland to hypertrophy during pregnancy probably related to toxæmia. Administration of thyroid beneficial by supplying this deficiency and by diuretic action. Saline extract of fresh human thyroid proteids more rapid and reliable in action than ordinary sheep thyroids. Hypodermic use of thyroid proteids greatly superior to oral use. *Ward, Jr.* 27

Tuberculosis of Bladder. TREATMENT. 1. General hygiene. 2. Internally, 5 grains of guaiacol carbonate *t. i. d.* 3. Locally, instill into bladder every other day 20 drops of 20 per cent. iodoform emulsion in liquid alboline, with deep urethral syringe. *Christian*. 417

Tuberculosis of Joints. TREATMENT. In children, conservative treatment should be followed until all hope of saving limb is gone, and then only give place to amputation; resections out of place in children. In adults, unless conservative treatment yields distinct improvement in six months, operative intervention (usually resection) is indicated. Best method of healing an adult tuberculous joint is, wherever possible (especially in knee), to deprive it of motion and convert it into a synostosis; diseased tissue may be left behind, as of little importance after this end secured. Operation to secure ankylosis of knee: straight incision across patella. Saw through patella and reflect fragments. Divide lateral aponeurosis, but not lateral nor crucial ligaments. Saw off ends of femur and remove cartilages of tibia. Patella may be dissected out or left in. Sew up joint, insert rubber tissue drain, if desired, to be left in only twenty-four hours, and immobilize limb in plaster of Paris. *Ely*. 609

Case of "white swelling" of knee found due to sporotrichosis. Before operating on similar supposedly tuberculous joint lesions, possibility of sporotrichosis should be considered. *Jeanseime and Chevallier*. 615

Tuberculosis, Laryngeal. TREATMENT. Injections of alcohol into superior laryngeal nerve effectually relieved severe dysphagia in 6 cases. Use Schlösser's needle, with point bluntly bevelled. Patient horizontal. Make affected half of larynx project by pressing on sound side. With index finger find painful spot between thyroid cartilage and hyoid, pressing in from without. Push in needle

for $1\frac{1}{2}$ centimeters at this spot, and move it about to seek spot where patient feels pain in ear. Inject slowly solution of 2 grains of β -eucaine hydrochloride in an ounce of 80 per cent. alcohol, warmed to 45° C. (113° F.). Continue injection until pain in ear ceases. Patient not to swallow or speak during operation. *D. Grant.* Page 618

Case with marked infiltration of epiglottis and aryepiglottic folds, and ulceration of one vocal cord, in which three applications of galvanocautery led to recovery. Powder of anæsthesin and orthoform, equal parts, inhaled into larynx for pain. *D. Grant.* 426

Tuberculosis, Pulmonary. DIAGNOSIS. X-ray method contributes to early diagnosis. Where symptoms point to pulmonary lesion but no physical signs are demonstrable, radiography may show peribronchial infiltration or enlarged bronchial glands. Later, consolidated areas and cavities can be accurately located at any depth within the lung. *Leonard.* 177

Two signs found useful for early detection of small apical lesions: 1. Lagging of one apex behind other in a one-sided lesion, or lagging of both apices in a bilateral lesion. Stand behind patient, who is seated, and place hands with thumbs over suprascapular fossæ and fingers over anterior chest-wall; irregularity in entrance of air into either apex quickly noticed. 2. Rigidity of muscles over seat of lesion, especially of sternomastoid and scaleni if lesion on anterior portion of apex, trapezius, levator anguli scapulae and rhomboidei if posterior. Best detected by very light touch. *Pottenger.* 682

TREATMENT. Mercury succinimide administered hypodermically in 8 cases caused general improvement and appeared to exert a marked controlling influence over the tuberculous process. *Freeman.* 90

Beechwood creosote given both internally and by inhalation affords much relief to symptoms in nearly all cases and in all stages. It is also valuable as a preventive in those predisposed or exposed to the infection. Rest, fresh air, proper food, with or without lime salts. *Beverly Robinson.* 23

Menthol ointment (30 or 40 per cent.) used with benefit. It is rubbed in daily for 10 minutes, skin of back, chest and thighs being successively employed. Improvement manifest alike in symptoms and physical signs. Probably acts directly on involved tissues. Treatment should be persisted in for 4 months or more. Also valuable in old fibroid pneumonias. *Stepp.* 238

Early tuberculosis treated by antiseptic inhalations with remarkable results. Solution used: Phenol, creosote, spirits of chloroform, of each 8 cubic centimeters (f3ij); tincture of iodine, spirits of ether, of each 4 cubic centimeters (f3j). Of this 6 to 8 drops are poured on the felt or sponge of Yeo's perforated zinc inhaler, and inhaled regularly every hour in

the daytime, as well as 2 or 3 times during the night, when patient is awake. Cough is thereby relieved without sedatives and expectoration facilitated. Where hæmoptysis, add turpentine to the solution. In all cases patient should rest in bed for a week, with windows of bed-room open. In second week he may rise for an hour or two daily, and later walk in the open air every morning. When temperature is normal, use of inhaler may be gradually left off. *Lees.* 93

Two cases distinctly improved in all respects by treatment with thymus gland; 30 to 120 grains three or four times daily. Author uses fresh thymus of calves, dried by himself. *Guyer.* 424

In intercurrent febrile "grippal" attacks in the tuberculous, saline proctoclysis by Murphy's method increased comfort of patient and apparently cut short invasion. Amelioration also in periods of toxæmia due to release of previously confined pus. *Sewall.* 678

Tuberculosis, Superficial. **TREATMENT.** Mercury succinimide (gr. $\frac{1}{8}$ subcutaneously every other day) with mercury protiodide (gr. $\frac{1}{4}$ by mouth *t.i.d.*) gave good results in two obstinate cases of scrofuloderma and one of pharyngeal infiltration. Curetting, cauterization and X-rays ineffective until mercury added. *Hertzberg.* 25

Tuberculosis of Urinary Tract. **TREATMENT.** Tuberculin valuable in stamping out secondary processes in bladder, ureter or prostate after more massive renal or epididymal lesions dealt with surgically. Promotes healing of operative wounds. *H. Cabot.* 683

Typhoid Fever. **INTESTINAL PERFORATION.** Mortality after operation for perforation in children is below 50 per cent.—25 per cent. lower than in adults. *Jopson and Gittings.* 25

TREATMENT. Alcohol compresses to the abdomen in children advocated in preference to the cold tub-bath treatment, which author regards as favoring hæmorrhage or perforation and as liable to work injury to the heart. Compresses used in 12 severe cases which were rendered milder. Pad of absorbent cotton or eight thicknesses of gauze wrung out in 85 per cent. alcohol (90 per cent. for adults), applied to abdomen, covered with cold-water gauze compress, and held in place by flannel band. Water compress renewed every hour, alcohol compress every 2 hours. Acts by local active hyperæmia, while alcohol absorbed stimulates heart. Used also in peritonitis and appendicitis with benefit. *Cheinisse.* 122

Typhoid Fever in Pregnancy. **PROGNOSIS.** Pregnancy has no marked effect on mortality in typhoid. Abortion or premature labor occurs, however, in 65 per cent. of cases, commonly in second week, occasionally in convalescence. Fætal mortality 56 per cent. Expectant treatment advocated. Mother's condition should be taken as guide in deciding on induction of premature labor. *Brickner and Oppenheimer.* 619

Ulcer of Leg, Syphilitic. TREATMENT. Reduce alcohol consumed. Mercury, and iodides, preferably organic iodides, well diluted, alternated with courses of strychnine particularly when ulcer again becomes sluggish. General antiseptic application: Boroglyceride 3j, hot water Oss. Locally, black or yellow wash; solution of phenol (1 to 100); tincture of iodine (1 to 4 or 5 of hot water); ammoniated mercury or yellow oxide ointments. Dry treatment: Zinc oxide 3iij, calomel, 3ss, infusorial earth q. s. ad. 3j. X-rays have benefited some cases. Where ulcer resists cure due to tethering of its edge to underlying bone, apply antiseptic fomentations, scrape ulcerated surface with Volkmann's sharp spoon, undercut edges with scalpel, and draw them together, freshening skin-margins. *W. Evans.* Page 23

Uncinariasis. DIAGNOSIS. In mild cases eosinophilia is often not available for diagnosis. Following method recommended: Dilute fecal material ten times with water and centrifugate at high speed for 6 or 8 seconds. Pour off supernatant fluid, shake sediment with water, and centrifugate again just long enough to throw eggs to bottom (usually 2 seconds). Repeat once or twice, remove sediment with pipette and examine for eggs. Calcium chloride solution assists in removal of debris. Large amounts of feces may have to be examined before eggs discovered. *Bass.* 168

Vomiting in Infants. TREATMENT. Condition often a mere habit, vomiting reflex being established owing to former injudicious feeding. Administer chloral, bromide or chloretone until habit is broken; or better, exhaust the vomiting center by giving harmless emetic, as wine of ipecac and carbonate of ammonium, half an hour before feeding. Latter method used in 55 cases; immediate cure in 30, and improvement in 10. *Pritchard.* 239

Vomiting of Pregnancy. TREATMENT. Adrenalin used with success in a case previously uncontrollable. Ten drops of 1 to 1,000 adrenalin solution given morning and night, at first in enema of 150 grams (5 ounces) water with 20 drops of laudanum, after 3 days in ice-water by the mouth. Nutrient enemas also given. Vomiting ceased on second day, and on third patient could retain a little food. Recurrence of nausea toward end of pregnancy relieved by 10 drops daily for 5 days. *Rebaudi.* 94

Vomiting, Postoperative. TREATMENT. Where nausea, vomiting or gaseous distention after abdominal section, employ gastric lavage, which often checks incipient peritonitis. Spray pharynx with 2 per cent. cocaine solution 10 minutes before tube introduced. *A. J. Ochsner.* 360

Wassermann Reaction. Positive reaction often noted in cases of leprosy giving no history or symptoms of syphilis, chiefly in the tubercular and mixed forms of the disease (31 out of 38). In cases of the maculo-anæsthetic and purely trophic type it is usually negative (3 positive out of 22). *H. Fox.* 355

Reaction of fixation studied in 76 children, including 72 cases of hereditary syphilis. Where disease appears early 87.5 per cent. of cases give positive reaction. Reaction may be rendered negative by mercurial treatment. Where active stage of disease past, response depends on time elapsed since last symptoms. In hereditary syphilis appearing late, only 20 per cent. of cases gave positive test; hence, negative reaction does not eliminate syphilis, especially after a certain age. Reaction uniformly negative in non-syphilitic children. Scarlet fever not a source of error. *Demanche and Détré.* 542

Whooping-Cough. TREATMENT. Oxygen used in 30 cases. It is given at each paroxysm. Cyanosis subsides and suffocation is prevented. Child keeps in good condition with appetite throughout. It is best inhaled through a funnel; 10 to 12 liters necessary to control a paroxysm. Where broncho-pneumonia threatens, oxygen should be inhaled every hour; it renders lung aseptic. *Weil.* 64

Quinine salve applied to nasal mucous membrane with benefit. Used 1 to 2½ grams of quinine in 10 to 15 grams of lard (30 grains to 2 drams in 1 ounce), and introduced piece of salve size of pea into each nostril 3 to 4 times daily with glass rod, head being thrown back. Symptoms much improved after 3 or 4 days. Especially effective in very young children. *Berliner.* 301

Wounds, Infected. TREATMENT. Freshly prepared mixture of 1 part of iodine tincture and 5 parts of hydrogen peroxide solution recommended. *Rodolfo and Rivarola.* 684

ANNOUNCEMENTS.

PHYSIOLOGIC THERAPEUTICS, the progressive new journal dealing with non-medicinal methods of treatment, will celebrate the New Year with a special double number. Several thousand extra copies are to be printed, and will be sent with the Season's Greetings to such physicians as may be interested. Those of our readers who desire a copy of this number should send a postal request to Dr. H. R. Harrower, Park Ridge, Illinois.

AMERICAN SOCIETY OF MEDICAL SOCIOLOGY.—In view of the intimate relationship between diseases and the social-economic system under which we live, and recognizing that

the efficiency or inefficiency of treatment often depends upon the economic condition of the patient, the American Society of Medical Sociology has been organized for the purpose of studying radically all questions of a sociomedical nature, which, though deeply and vitally affecting the welfare of mankind, are left untouched by any existing medical society. The co-operation of all physicians interested in these questions is desired. Requests for information, applications for membership, etc., should be addressed to the headquarters of the Society, 12 Mt. Morris Park W., New York City.

A NEW WORK on Practical Treatment, edited by Dr. John H. Musser and Dr. A. O. J. Kelly, of the University of Pennsylvania, is soon to be issued from the presses of the W. B. Saunders Company. In looking over the list of contributors to this work, which is in three volumes, we find that each chapter has been written by a specialist high in authority, whose name carries with it the positive assurance of thoroughness. Leading surgeons have also been selected to present such subjects of a more or less surgical nature as the general practitioner may require to know. The work will surely prove valuable as a source of practical information.

Book Reviews

THE QUALITIES OF MEN. An Essay in Appreciation. By Joseph Jastrow. Boston and New York: Houghton, Mifflin and Company. Price, \$1.00.

It may seem unusual to review such a book as this in a purely medical journal. The reason will appear to the practitioner who will read it. An important part of any clinician's duties is to direct the patient's thoughts in the right channels, always a potent factor in rejuvenation and repair. There is constant need of helpful books to recommend to ill-trained patients, whereby a grand work can be laid for specific teachings and recommendations. Those who have searched book-shops know too well how meager is the supply of guides to human action of general acceptability; how difficult it is to get what is wanted unmarred by pettiness, bigotry or partisanship. Well, here it is; a charming presentation of "the qualities of men" (or women), couched in flawless prose, full of charm, philosophy, widest literary range, forceful and convincing. It is written by a master of psychology, and from the best sources of worldly wisdom.—J. M. T.

SURGICAL AFTER-TREATMENT. A Manual of the Conduct of Surgical Convalescence. By L. R. G. Crandon, A.M., M.D., Assistant in Surgery in the Harvard Medical School; Assistant Visiting Surgeon to the Boston City Hospital, etc. Octavo of 803 Pages, with 265 Original Illustrations. Philadelphia and London: W. B. Saunders Company, 1910. Cloth, \$6.00, net; Half-morocco, \$7.50, net.

This useful work was written for two classes of practitioners: house surgeons in hospitals, and general practitioners in communities which are not surgical centers. It goes sufficiently into details, however, to be of marked practical value not only to the classes mentioned, but also to practising surgeons. The author has covered the field implied in the title in a manner almost encyclopædic in its completeness, dealing not only with general considerations of the subject, but with the postoperative management of special surgical procedures.

Part I contains chapters on the sick-room, posture of patient; anæsthesia, postanæsthetic symptoms and their treatment; thirst, its significance and relief; pain and sleep; pulse, temperature and respiration; postoperative hæmorrhage: primary, delayed, secondary; transfusion; shock; coma: diabetic, uræmic, etc.; thrombophlebitis, pulmonary embolism, etc.; artificial respiration, oxygen, electricity; diet after operation; rectal feeding; catheterization; acute gastric dilatation; acidosis; treatment of operative wounds, sinuses, fistulæ, etc., as well as many other useful chapters too numerous to mention. A section on bandaging, amply illustrated, is also a valuable feature. The treatment of all the postoperative complications is exceptionally well covered. The literature has been carefully gone over and the most valuable hints and recent opinions of various authors included in the text. A chapter on electrotherapy in postoperative conditions is contributed by Dr. F. B. Granger.

Part II is devoted to the after-management of special operations and their sequelæ. The sections on the abdominal, gynæcologic and orthopædic operations will be found especially complete and valuable. There is also an extensive section on "Therapeutic Immunization and Vaccine Therapy," by Dr. George P. Sanborn, former assistant to Sir A. E. Wright, in which both the theoretic and practical aspects of these subjects are ably presented. The laboratory technique of vaccine preparation, opsonic index determinations, etc., is included, and is greatly clarified by illustrations showing the steps in the various procedures. The uses of tuberculin are also fully discussed. The work closes with a valuable appendix, consisting of a series of food recipes adapted for convalescents, and the usual indices.

The work can be warmly recommended to the profession. By definitely pointing out the best methods of postoperative treatment it should go a long way toward increasing the comfort of surgical patients.—L. T. D.M.S.

THE DISEASES OF WOMEN. A Handbook for Students and Practitioners. By J. Bland Sutton, F. R. C. S. Eng., Surgeon to the Middlesex Hospital, and Senior Surgeon to the Chelsea Hospital for Women, and Arthur E. Giles, M.D., B. Sc. Lond., F. R. C. S. Edin., Surgeon to the Chelsea Hospital for Women. Sixth Edition. Small Octavo of viii + 554 Pages, with 123 Illustrations. New York: Rebman Company. Cloth, \$3.25.

In the present edition of this work, besides minor additions and corrections, five new chapters have been introduced. Chapter XIX deals with "Injuries of the Uterus," including rupture of the organ, lacerations of the cervix, and perforation during curettage. Stress is laid on the danger, in accidents of this last type, arising from leakage of irrigating fluids into the peritoneal cavity and from protrusion of the small intestine through the rent in the uterine wall. Chapters XXIII and XXIV are devoted, respectively, to "Fibrosis Uteri," a condition first described by the senior author in 1899, the leading clinical feature of which is uncontrollable menorrhagia associated with profound anemia and uterine enlargement, and to "Adenomyoma of the Uterus," studied particularly by Cullen in this country.

Chapter XXXV is on "The Vermiform Appendix as a Pelvic Organ." The authors emphasize the fact that an acute appendicitis with the tip of the appendix lying free in the pelvis mimics not only pelvic cellulitis and abscess, tubal pregnancy and pyosalpinx, but may actually set up salpingitis and ovaritis. An illustration is included showing the pathological specimen from a remarkable case in which the tip of the appendix, adherent to the ostium of the Fallopian tube, became inflamed, then burst and discharged its contents into the lumen of the tube, producing salpingitis. Chapter LXII, dealing with "Injuries to the Ureters in Pelvic Operations and their Treatment," was added in view of the growing popularity of various forms of hysterectomy, including especially the radical operation for cancer of the cervix (Wertheim), which is described for the first time in this edition.

This work is an excellent presentation of the subject in a condensed form. Certain of the sections on treatment appear to be rather lacking in detail, and the chapters dealing with operative procedures would be much improved by an increase in the number of illustrations. We are somewhat surprised to find no description of any of the operations for the correction of uterine retrodisplacements by shortening or transplantation of the round ligaments, though hysteropexy is duly considered. Notwithstanding these few minor deficiencies, the work is admirably suited for the use of students, and we believe that both general practitioners and specialists will also find in it much that is suggestive.—L. T. DE M. S.

TEXT-BOOK OF HYGIENE. A Comprehensive Treatise on the Principles and Practice of Preventive Medicine from an American Standpoint. By George H. Rohé, M.D., Late Professor of Therapeutics, Hygiene and Mental Diseases in the College of Physicians and Surgeons, Baltimore, etc., and Albert Robin, M.D., Professor of Pathology, Bacteriology and Hygiene, Medical Department of Temple University, and Philadelphia Dental College; Bacteriologist, City Water Department, Wilmington, Delaware, etc., etc. Fourth Revised and Enlarged Edition. Octavo of viii + 582 Pages, with Many Illustrations and Valuable Tables. Philadelphia: F. A. Davis Company. Cloth, \$3.00, net.

Since the previous edition of this work the advances in hygiene and sanitation have been so extensive that several of the chapters had to be entirely re-written, and the others brought up-to-date by numerous changes and additions. New statistical tables and illustrations have also been introduced. Dr. Walter Wyman, Supervising Surgeon-General, U. S. Public Health and Marine Hospital Service, has revised the chapter on "Quarantine." The chapters on "School Hygiene" and "Personal Hygiene" were prepared by Dr. Francis W. Upshur, of the University College of Medicine, Richmond, Virginia. The chapter on "Military and Camp Hygiene" was re-written by Walter D. McCaw, Surgeon-Major, U. S. A., and that on "Marine Hygiene" by Henry G. Beyer, Surgeon-Major, U. S. N., Professor of Hygiene in the U. S. Army and Navy Medical School, Washington, D. C. In addition to the above there are the customary chapters on air, water, food, soil, sewage removal, construction of habitations, industrial hygiene, infectious diseases, disinfectants, etc., which have been revised by the editor. The sections on water and food are especially well done and that on marine hygiene is admirable in every way. The subject of heating and ventilation of habitations, on the other hand, is not sufficiently developed. The history of epidemic diseases was written entertainingly by the late author and appears with but little change. The book, as revised, is a useful one for the student, general practitioner and sanitarian.—L. T. DE M. S.

THE PHYSICIAN'S VISITING LIST (Lindsay & Blakiston's) for 1911. Philadelphia: P. Blakiston's Son & Company, 1910.

This small volume, the publishers inform us, with this issue enters upon the sixtieth year of its existence. It includes a section on the incompatibilities, brief directions for the treatment of poisoning, tables for converting apothecaries' weights and measures into the metric, a very complete dose-table, treatment of asphyxia, calendar, etc. These are followed by conveniently arranged blank leaves for noting down names of patients, dates of visits, amounts charged, memoranda, etc. In the back of the book are leaves for other special purposes, such as addresses of patients, vaccination engagements, birth and death records. The book is well arranged, and is of convenient pocket size.

The General Field

English Justice

The Crippen case has produced the usual flood of invidious comparisons between the inscrutable methods of administering English justice and the long and tortuous route which it is often necessary for the prosecution to traverse in order to convict a criminal of murder in the United States.

While there is plenty of reason to criticise the criminal procedures in certain States, it is doubtful if public sentiment in this country will, for a long time to come, favor the English method. To the American observer, in order that no guilty person may escape, the English court of justice seems to place the chief burden on the defense, which is practically the antithesis of the American code, which places the burden on the prosecution, and gives every opportunity to the defense for rebuttal of testimony.

There are States where circumstantial evidence is sufficient to convict; but, as a rule, an American jury must be convinced by pretty positive proof before they will bring in a first degree verdict.

It is charged against the Americans that human life is very cheap in the United States, whereas murders in civilized European countries are comparatively rare. It is a question, however, whether the presence of an army in most of the European countries and the compulsory system of military education is not the real reason for the comparative infrequency of homicide in those countries.

In the United States every community is practically self-governing, and the average American citizen is a man of untamed spirit. In his more or less strenuous intercourse with his fellow-men

he sometimes lapses into actual violence, whereas the more subdued and apathetic European of the lower classes is more under the domination of the police and military authorities.

It is one of our pleasing American customs to rush into print and expose each other's weaknesses. Those citizens of foreign countries who read these caustic American criticisms of American customs and Americans in general are very apt to get ideas at variance with the real facts.

A Crime Against Italy

Some years ago when a few disorderly Italians were lynched by an American mob, the Italian government with great promptness and indignation insisted upon reparation. As the American government had no case whatever it was considered policy to make terms.

There is an American crime, however, being perpetrated against many sons of Italy which makes the mob tragedy seem insignificant by comparison. For some reason the Italian seems to find his way into the ranks of the street cleaners of many American cities. He sweeps his way from curb to curb, and during a good proportion of the year is constantly surrounded by a cloud of dust.

Repeated analyses of street dust have shown how deadly it may be. The husky Italian can present a brave front to many forms of privation in his family life; subsist on food on which the American would starve; go without heat in cold weather and still thrive; but even the Italian is not immune to street dust.

A great many offenses are charged against the administration of affairs in the large cities. One of the most heinous

of these crimes is being perpetrated against the Italian, and accepted by him as a matter of course.

Those who come in contact with street dust during the limited amount of time necessary to walk a few blocks on a crowded thoroughfare are quick to recognize the discomfort thus experienced; but the street sweeper is inhaling a much greater volume of dust the entire working day through a considerable portion of the year.

A Curious Postal Proposition

Coincidentally, but, of course, not in any way associated with the muck-raking tactics of the popular weeklies and monthlies, agitation against the second-class mail privilege began.

The facts associated with this movement are too familiar to justify a recount. It is only necessary to say that most of the drastic measures recommended have been so framed as to chiefly affect the independent weeklies and monthlies who have been saying things about Congress and certain other eminent officials.

The latest suggestion is that a special rate of postage be applied to such portions of the magazines and weekly newspapers as are devoted to advertisements. As a good many of the periodicals in question have reading matter and advertising matter pretty well mixed on a good portion of their pages, it can be seen that this analysis is likely to be quite a complicated affair.

There is no time when an official becomes more conscientious than when it seems to be necessary to do his full duty in regulating the affairs of his critics. While, of course, it would be in very bad taste to suggest that there was any connection between the criticisms made of the Postmaster-General and the adminis-

tration which he represents and the recommendation which he is now reported to have made as above outlined, there are always people of that earthy fiber who are quick to see such a connection, and they have not failed to point it out this time.

It is more than likely that the last days of the present Congress will be taken up with other matters of more vital interest to the members and their constituents than the carrying out of this last quaint suggestion from the Postoffice Department.

A Symptom of Degeneration

A glance at the holiday-book shelves of a department store is only necessary to show the demoralizing tendencies of modern fiction.

The successful novelist, with a few exceptions, is the one who is able to produce the maximum number of thrills with a minimum amount of intellectual effort on the part of the reading public.

The principal readers of this class of literature are school girls and very young women.

A prominent popular journal has reached a circulation undreamed of a few years ago through the publication of this class of literature.

If the Postoffice Department in their efforts to prevent the abuse of the second-class mail privilege were to undertake to censor the quality of literature which is being poured out in this wholesale fashion, they would find themselves backed by a very strong sentiment.

An aroused public sentiment has done considerable to prevent the sale of cigarettes to adolescent boys, and also to prevent the circulation among them of more or less nude photographs offered as inducements by cigarette manufacturers;

but it is a question whether a great deal more harm is not being done to adolescent girls of the present era through the unlimited opportunity now offered them to read cheap literature. While the literary quality of the "dime novel" of a generation ago may have been much inferior, the moral suggestions of the dime-novel period were far less hurtful than much of the fiction now being distributed by the carload by eminently respectable publishers.

It is not difficult to appreciate the difference in the impressions produced on the developing mind of girlhood through a perusal of a book like "Richard Carvel" and much of the popular fiction of the present day. That unlimited reading of light fiction has a deteriorating effect—physically, mentally, and morally—could not be reasonably questioned by any well-informed person.

The Aristocratic Bovine

At a recent sale of Ayrshire stock in New England, forty head of cattle of all ages brought an aggregate of \$9700.

The cow is rapidly becoming the queen of beasts. The reason for this is plain. There may be bi-product substitutes for butter, which certain people qualified by long experience may succeed in foisting on to a long-suffering public, but there has been a great deal learned within a comparatively few years about milk, and a steadily increasing number of families demand the real article and a good lot of it.

Compared with other food products, good milk, even at the high prices prevalent in the large cities, is a relatively economical food. Altogether, the outlook for the mild and inoffensive, but sometimes basely slandered, cow is exceedingly bright. Nothing seems to be too good for her. She has palatial quar-

ters, a carefully studied menu, and is watched over with solicitude by uniformed attendants.

In these days of cynicism, sarcasm, pessimism and other regrettable "isms," it is pleasant to think that the cow, at least, has no reason to kick.

Hard Lines for a Count

It is popularly supposed that the average real count with a brunette complexion and early acquaintance with all the various culinary preparations of spaghetti is fully sophisticated. There is supposed to be little left for him to learn which would likely be useful to him in his vocation, or perhaps, we should say, avocation, in life.

It seems, however, that one count has been learning a good deal through association with an irate father-in-law of Chicago extraction, and considerable experience in the management of hogs. Merely because in a moment of pique his count son-in-law threw his wife down the stairway and broke her knee-cap, the vulgar, commonplace, but financially strong and otherwise robust father-in-law became real nasty. He kicked the count all around the spacious front hall of his palatial residence, and finally violated all the proprieties of high-toned family rows by opening the front door and kicking him into the street.

It is always unfortunate to see a lack of harmony existing in a refined family circle. It becomes even more regrettable when all the details of a strictly family altercation, financial, personal and clinical, become the property of an always interested public. It is evident, however, that even the most blasé count can sometimes acquire the knowledge of a new sensation when he invades the interior of this new, raw, and uncouth country.

Discrediting the Physician

There are some people who get very sarcastic over most everything that comes before them.

A certain medical writer for popular journals is always making invidious suggestions regarding the rank and file of the medical profession who, according to his flippant style of analysis, are merely time servers, bluffers, and ignoramuses.

We do not know how highly this distinguished author is regarded by his colleagues of the profession, but, if they place a high estimate upon his personality and attainments, it is merely another instance of their professional tolerance.

The medical profession is chiefly composed of two classes: those who have so little professional income that they are unable to spend the money for apparatus and office equipment, which they naturally desire, and those who are so constantly on the go on account of their professional duties that they have comparatively little time to analyze the thousand or more new medical suggestions which are turned up every twelve months.

The education of the public by patient medical investigators as to the spread of disease by animal and insect carriers is one of the achievements of the past few years which promises to add quite an average span of years to the lives of the children and adults of the coming generations. This, in itself, is a monument to the research and conscientious discharge of duty by the medical profession, calculated, for centuries to come, to reflect luster on the physician of the present day.

The Desire for Change

The decisions of the courts, the carrying out of a legislative program, even the policy of a railroad, depend upon the trend of public sentiment. For this rea-

son no public policy can ever be considered as entirely settled.

The fact is that humanity constantly craves a change. Adherence to a definite fixed policy eventually produces a revulsion of public sentiment. The recent reverses in the political lives of numerous public officials was due, in no considerable measure, to their own acts, but rather to the inevitable seething clamor of the great mass of voters for variety.

The average wage earner some years ago was convinced that a protective tariff was essential to his interest. Having failed to get rich under the working of the protective tariff, he decides for a change. He votes for lower tariff duties with the expectation that the cost of living will decline. Immediately the manufacturers of European countries see a prospect of getting an American market for their products. They know what that means, because only comparatively a few years ago they enjoyed for a season that privilege.

Political science, as it is comprehended by the average city voter, seems to consist in alternately voting for a high and a low tariff. When the tariff duties are high, wages are also higher, but the cost of commodities is increased. With the lowering of the cost of living, wages decline, hence the constant swaying of a large class of voters.

If the tariff commission should be able to remove this question from the field of politics and establish a policy based on correct economic principles only, much of the significance of a change in political majorities would be lacking. As it is, under present conditions, the economic and commercial policy of a very large country is subject to the constant oscillation of the pendulum of public opinion based largely upon the inherent human desire for a change in the monotony of life.

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